SOCIETY OF ACTUARIES

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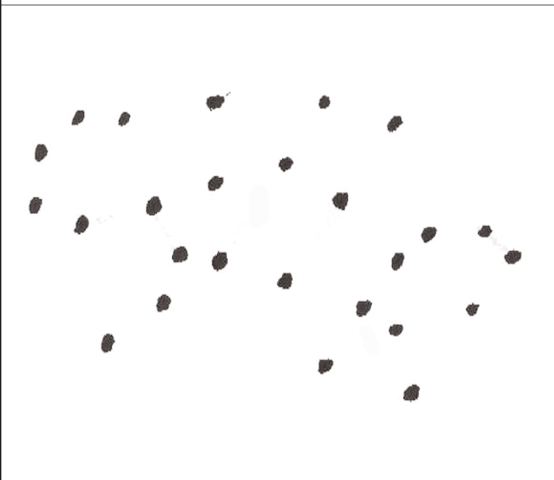
The Financial Reporter

The Newsletter of the Life Insurance Company Financial Reporting Section

SVL II: Connecting the Dots

by Shirley Shao



There seems to be an exponentially increasing number of dots in my job! AG38, RBC C-3 Phase 2, risk management, Sarbanes-Oxley, SOP 03-01, the Morris Report, IASB and IAIS Solvency, just to name a few buzzwords. What is my world becoming, where is it going, and how do all of these dots connect? Or do they?

I turned to the American Academy of Actuaries for an answer, and was introduced to the *SVL II Task Force* of the Life Risk Solvency Committee, chaired by Dave Sandberg. The project began at the request of the NAIC in March 2004. The Academy was asked to consider what enhancements should be made to the current Standard Valuation Law (SVL). The formulation of the SVL 15 years ago incorporated the then latest advances in modeling and risk awareness, resulting in an appointed actuary role and risk-based capital requirements. The NAIC asked what has been learned since that would be relevant to consider in a new standard valuation law (Standard Valuation Law II).

Goal

The goal of the task force is to develop a set of analytics, standards for communication and principles for reporting to be reflected in possible enhancements to the valuation and capital requirements for life insurance companies in the United States.

Framework (from the top down)

The task force is approaching this from two perspectives: top-down and bottom-up (and maybe everywhere in between, too).

From the top down, the task force would like to build a new enterprise risk management (ERM) reporting framework. Under this framework, an enterprise-wide view of all potential risks and rewards are to be explicitly identified and analyzed. It would be a comprehensive and consistent ERM structure that applies to all product types, including life, annuities, health and reinsurance.

This proposed framework would require a range of rigorous and analytic approaches to produce the blend of reserves and capital; it would require the necessary review, accountability and disclosure to address the traditional NAIC C1-C4 risks; and it could incorporate broader business risks, such as the impact of new business or other nonfinancial risk.

The key to this ERM framework is the use of a modeling-based, prospective valuation, which will be more principles-based than today's formula-based valuation. This will allow reserves and capital to be determined based on the underlying risks that pertain to the individual company, rather than a disconnected fixed formula for all companies. In addition, it enables the use of a consistent ERM framework for both reserves and capital, rather than today's somewhat disconnected reserve and capital requirements. In addition, it will enable reserves and risk-based capital to be established consistently and be more aligned with how risk is measured

continued on page 3 >>

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What's Inside

1 **SVL II: Connecting the Dots**
With an increasing number of complex issues facing the profession, there is a risk that responses will be adopted that are inconsistent with each other or even incompatible. The NAIC has asked the Academy to consider what enhancements should be made to the current Standard Valuation Law. The Academy has formed the SVL Task Force to examine possibilities for valuation and captial requirements. Learn about this important, ambitious task.
Shirley Shao

8 **Chairperson's Corner**
The section's objectives for 2005.
Tom Nace

10 **Editor's Corner**
Our next editor has been found! Other comments.
Jerry F. Enoch

10 **Status of Reserach Projects Sponsored by the Financial Reporting Section**
The title says it all. Short and sweet.
Henry Siegel

11 **Calculation of the Benefit Ratio in SOP 03-1**
In the last issue we carried an article that compared two approaches for calculating the benefit ratio under SOP 03-1. The Academy's practice note states that both approaches are reasonable interpretations of the SOP. The author provides detail and additional insight into this matter. Another "must read" for anyone who calculates these benefit ratios.
Darrin G. Zimmerman

14 **International Financial Reporting Standards (IFRS) Update**
This brief update, based on a recent seminar on IFRS, summarizes Phase I, some expected direction under Phase II, the planned convergence between U.S. GAAP and IFRS, and results from a survey.
Mark J. Freedman and Maria Torres-Jorda

16 **Alternatives for Funding XXX Reserves**
A brief article that summarizes a number of methods available for funding reserves required under Triple-X. Other applications of these methods, while not addressed, are possible.
David R. Prickitt

18 **Demystifying Life Insurance Securitization: XXX and AXXX Securitization Issues and Considerations**
An examination of one of the methods for funding XXX reserves, which, of course, has broader applications and is an increasingly important source of capital for the industry.
Steven D. Lash and Rebecca Kao Wang

23 **What's Outside**
Articles of interest to financial reporting actuaries.

and managed within a company. The framework must also provide enough safety and transparency within the modeling-based approach so that both the regulators and industry can enjoy the benefits of more economic- (reality) based reserves and capital.

Since this ERM framework would depend on valuation actuaries' doing the "right" thing, communication will become ever more important to make it work. Many governance issues around this framework will need to be built to ensure transparency and appropriate disclosures to a broad range of stakeholders. These may involve peer review, professional standards, management and regulatory oversight, etc.

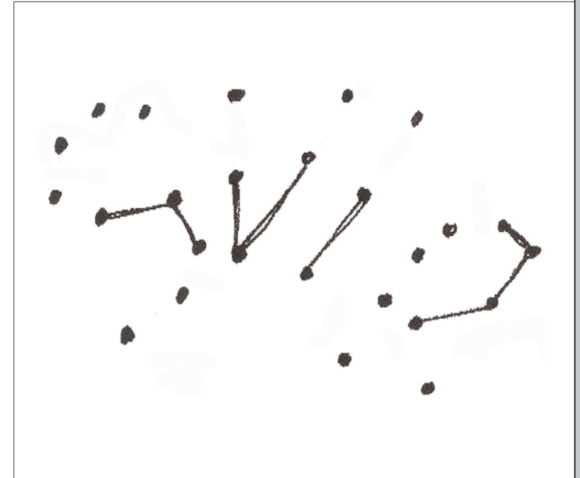
If successful, this framework will:

- Strengthen the regulators' ability to do their jobs.
- Relieve the current patchwork collection of valuation requirements.
- Align financial reporting with how the company actually manages its risks and opportunities.
- Provide flexibility for innovative product designs.

Where We Are Now (from the bottom up)

In the United States, there are various dots forming that use model-based reserves (the AG 38, long-term UL solution) or modeled capital (RBC-C3 Phase 2). We have also been doing the model-based cash-flow testing for more than a decade, but have not used the results in our books except in rare circumstances. In the GAAP world, we see more and more "carveouts": FAS 133, SOP 03-01, fair-value disclosure, etc, that use model-based valuation. FAS 97 DAC valuation has also been model-based.

Outside the United States, several countries, such as Australia, Canada and the United Kingdom, have moved forward to model-based reserve and/or capital requirements. There are even more examples, if we count the disclosure requirements. Given the flexibility of the model-based valuations, several countries are building—or have already built—governance processes around model-based valuations to ensure the integrity of the valuation to the public, regulators and management.



Canada is the leader with its two-year-old requirement for peer review of the required actuarial opinions for life, P&C and pensions covering:

- Report of the appointed actuary
- Dynamic capital adequacy testing—a future financial performance report
- Minimum continuing capital and surplus requirement—Canadian risk-based capital
- Verification that dividend practices comply
- Propriety of expense and investment income allocation between par and non-par business

Before requiring peer review, the regulator felt there was too wide a range of practices under its model-based valuation, and that some actuaries were "skating too close to the line."

The peer review in Canada is an external review, usually performed by consulting firms. It is preferably done on a pre-release basis, which allows collegiality, but it may be submitted post-release. Ultimately, the reviewer would exercise professional judgment in determining the extent and depth of the review. The early indication is that the peer review process is working effectively.

The accounting firms in Canada have not been very involved in the peer review, since the auditor can rely on the work of the actuary. Due to recent focus on corporate governance resulting from Enron, the Morris review, etc., the regulator is considering whether this reliance should be terminated. However, even with increased audit scope, it would not be expanded to include a recalculation of the numbers. Rather, it focuses on the question of how much the auditor should review/state/opine on whether the methods and assumptions employed were appropriate and within a range of accepted actuarial practice. It will probably require peer review from the auditors for certain actuarial reports, but not for all.

continued on page 4 >>

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Basel II provides incentive for firms to adopt more sophisticated approaches in modeling and risk management...

Moving to Europe, the failure of the United Kingdom's Equitable, an event as significant in England as the failure of Enron was in the United States, has prompted official investigation of the actuarial profession. The Morris Report from the United Kingdom government was released in the past March. It concluded that continued self-regulation by the actuarial profession is unlikely to restore public confidence since it has been too introspective, not forward-looking enough and slow to modernize. The professional standards have been weak, ambiguous and perceived as influenced by commercial interests. There is also an absence of proactive monitoring of members' compliance with the actuarial professional standards.

Therefore, it recommended a fundamental restructuring of the regulatory framework for the U.K. actuarial profession:

- The regulation of the actuarial profession should be subject to independent oversight by the Financial Reporting Council (which also provides oversight to the U.K. accounting profession).
- The FRC should create an Actuarial Standards Board with a majority of actuarial members and representation from the users of actuarial advice, consumers and regulators to set future actuarial technical standards.
- The FRC should also oversee the other activities of the actuarial profession including setting codes of conduct, administering education, monitoring of compliance with professional standards and administering disciplinary procedures.
- The actuaries who have statutory reserve duties have whistle-blowing duties with appropriate legal protections.

Separately, the IASB's efforts in building global accounting requirements came from the cry for transparent international accounting standards after the Asian financial crisis. The IASB has split its project in two parts. Phase I, a compromise, short-term solution, is now in place for EU-listed companies. The IASB is now working on Phase II, which is supposed to provide a more rigorous solution to control insurance accounting once and for all. U.S. insurers will be affected directly, since the IASB has an agreement with FASB to work toward convergence. Phase II is moving toward requiring more, if not complete, model-based valuation.

While the IASB is busy with new insurance accounting standards, the International Association of Insurance Supervisors (IAIS) is looking into a new international solvency framework. The pressure is on, after the adoption of Basel II last summer, which prescribed the capital requirements for banks and aligned them closer to modern risk management practices. Basel II provides incentive for firms to adopt more sophisticated approaches in modeling and risk management, and requires additional disclosure of risk management practices. The IAIS also has reached a joint working agreement with the IASB.

Are you seeing dots yet?

Connecting the Dots

So, how can we form a connection between this high-level ERM framework at the top and what's already happening around us at the bottom?

Since completion of a comprehensive ERM framework will take many years, the early phases of framework development will leverage the work of the key NAIC/Academy initiatives, serving as "pilots" or "building blocks" to test applications for the broader ERM framework.

Initial Phase (Next 2 years)

The SVL II Task Force will focus on implementing building blocks for C-2 (pricing) and C-3 (interest and equity) risks. For pragmatic reasons, the first few building blocks will be completed at the product level. They will include high priority issues of current concern, such as RBC C-3 Phase 2 and reserves for variable annuities and UL with secondary guarantees. These dots can then serve as "pilots" or "building blocks" to test, shape and crystallize future initiatives, eventually leading to a comprehensive ERM state.

In the initial phase, the task force may also consider the valuation of equity-indexed annuities, which can be built off of the C-3 equity risk and interest risk pilots. Additional work will focus on correlation of equity and interest risks. The task force may also address changes to best estimate assumptions over time for long-term care.

In addition, the task force expects continued modifications of the asset default (C-1) and the general business risk (C-4) components to be done through the current RBC committee structures of the AAA and NAIC.

The task force serves as a coordinator, the dot connector, for the above initiatives. It works with various Academy groups, such as the one developing reserves for UL with secondary guarantees, to ensure that they are moving consistent with the strategic direction.

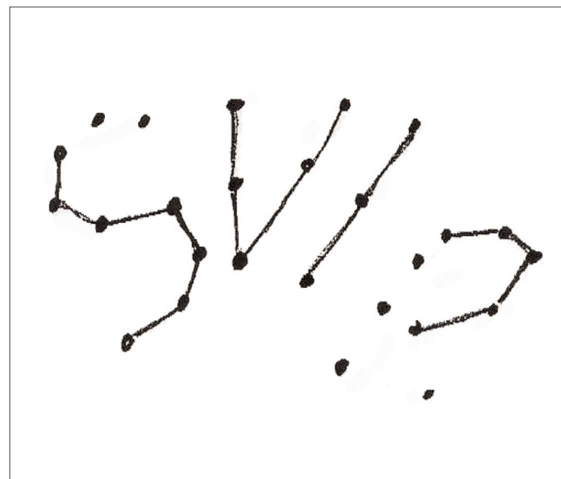
The task force takes on the work related to peer review itself. A major concern of the ERM framework has been that model-based balance sheet entries will result in a wide range of practices between companies. This would challenge the regulators to determine which practices are unreasonable. It would challenge rating agencies and stock analysts, who represent customers, stockholders, bondholders and other members of the public, to evaluate the relative strength of different companies. It would challenge company management to know how aggressive or conservative its valuation is. Therefore, establishing a required, independent regulatory review may be the primary means used to provide an acceptable, narrowed, range of practice.

Given the sweeping impact of this project, the task force has devoted time to build communication links to ensure adequate input and review. The task force plans to reach out to other Academy committees, SOA sections, NAIC groups, the Casualty Actuarial Society, various industry groups and rating agencies. It goes beyond the U.S. borders to reach the IAA, CIA and IAIS.

Next Phase (3-5 years)

For the next phase, the task force will

- Expand the product types to fixed annuities, EIAs (if not completed in the initial phase), VUL with and without guarantees, traditional life (participating and non-participating for term and whole life), LTC, LTD, medical and perhaps product types such as dental and accidental death and dismemberment.
- Monitor the remaining C-3 equity/interest and C-2 mortality/morbidity projects, taking into consideration the structure and the lessons learned from the pilots. This would also include putting a plan together to address C-1 and C-4 risks.
- Develop a strategy to address correlations between product types and risk types. The goal is to study the issue and lay a framework. This may include methods that regulators can use to control allowed diversification credits.
- Continue to work with the NAIC to develop oversight tools for the regulators. This includes validation and review procedures, as well as self-regulating processes, such as peer review, back-testing, corporate governance and reporting standards.



- Coordinate the development of educational materials and training of both practitioners and overseers.
- Identify and work with the SOA to develop the necessary tools and studies to support this initiative, such as: industry experience studies to support smaller companies, industry "averages" for regulator or professional needs and industry studies to analyze relationships of assumptions (e.g. interest rates and contract-holder behavior, interest rates and company behavior).
- Address the interaction of statutory reserves with tax reserves. This could include engaging tax authorities in discussion (this may be done via both this group and other Academy or SOA venues).

Peer Review

The task force is currently focused on peer review. At the March LHATF meeting, it presented the peer review processes, practices and results in Canada.

The additional freedom and authority that comes with model-based valuation will need to be counterbalanced with responsibility and accountability. This is particularly important in the Sarbanes-Oxley world of needing greater financial statement transparency.

Below are some of the questions the task force is currently asking:

- Do we need to have a required review? Does it need to be independent? The Academy could recommend what would be useful and effective in a required review by the regulators.
- How do we require a review? Since the first phase is focused on short-term test cases, a regulation may be the only practical alternative. For example, if regulators allow cash flow testing as a part of the AG 38 solution and they conclude that an accompanying review is needed, they may need to prescribe it, rather than waiting for company management or the profession to self-regulate.

continued on page 6 >>

> The model's usefulness is limited by how well we can describe and simulate real-life experience.

- What is the scope of the required review: is it product-specific or is it for the whole company? Could the regulator authorize or approve an internal review process as sufficient? Is it just for AG 38 products, for RBC C-3 Phase 2, etc? Can the regulator "waive" the review, and for what reasons?
- Who is the audience of the required review? Is it the appointed actuary, senior management, the Board of Directors, the regulator or the public at large?
- What are the acceptable qualifying criteria to be a "reviewing actuary?" Is there an approval or accreditation process? In Canada, the peer reviewer is selected by the appointed (or preparing) actuary and approved by the Board, with veto power by the regulator. How will this review be coordinated with the audit function to clarify accountability and reliance?
- What is the frequency of the required, independent review? In Canada, it is every three years, but the review is for the entire company, like a triennial examination. What is the timing of review: pre-release or post-release of company numbers?
- What must be included in the report of the review?
- What is the legal protection for both the reviewing and the opining actuary? Can confidentiality be extended to the review report? This answer is linked to answers to other questions. Since the short-term proposals will likely be implemented through regulations only, the only practical options may be to extend the confidentiality and opining actuary protection to the reviewing actuary.
- Is there is a need to collect key assumptions in a central location (AAA, SOA, ASB, NAIC, etc.)?
- Will there be an option or a requirement to rely on the domestic state?

The task force will coordinate with the Academy's Professionalism Committee, which is updating their 1997 document on peer review, and with the Actuarial Standards Board.

What does it mean to me?
This is all very exciting, but challenging! How do I, as a valuation actuary, respond to these changes? And, in some ways, I'm not capable of responding alone. How can my profession respond?

- Increasing financial modeling knowledge: In my mind, the requirements for cash-flow testing were a revolutionary change for the actuarial profession. I, along with a generation of valuation actuaries, was brought up to become familiar with modeling. This knowledge provides me with an excellent starting point in the model-based valuation. To take the next step will require more sophisticated modeling to evaluate the more complicated risks, to account for correlations and to determine the appropriate principles-based methods for measuring reserves and capital. Of course, for those risks that require stochastic processes, much more sophistication in modeling techniques would be required. I will need to figure out the appropriate generators to use, address the limitations of computing power, determine the appropriate cell construction, and look for more robust computing platforms.

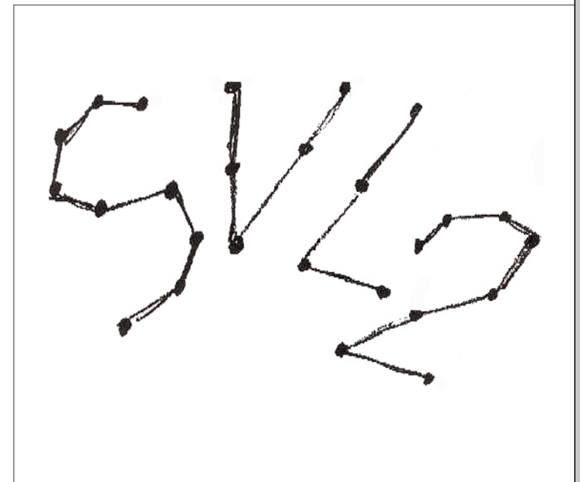
- Increasing knowledge of customer behavior and risk drivers: The model's usefulness is limited by how well we can describe and simulate real-life experience. For example, how will customers respond in differing situations to the various guarantees and options that we offer? I can run the stochastic model 100,000 times, but the results are only meaningful if the risk drivers in the model correspond effectively to reality in these scenarios. This effectiveness will need to be tested and validated.

In addition, I will need to be able to build experience studies that monitor various risk drivers more frequently than that at present, since the prospective valuation in the new world is likely be refreshed or unlocked frequently. It is critical for my colleagues in other firms and me to pool our experience efficiently to understand the risks and their financial implications.

- Increasing finance and investment knowledge: It is becoming more and more important that our models and valuation be connected with models and valuation used elsewhere in the financial markets. Option theory and hedging strategies will enter my daily life as I continue to debate between the "real world" and "risk-neutral world."

- Increasing responsibilities, counter-balanced by increasing accountability: I will probably feel more empowered, as the new valuation heavily depends on my judgment in assumptions, methods, modeling and results. However, I am also going to be more on the line to withstand peer review for these assumptions and model validation, to make additional disclosures to management and the public, to ensure that adequate controls are in place, to document, document, document and to support regulators and auditors in their review.
- Increasing communication and education to company management and outside audiences: I need to be able to unveil the "black box" to laypersons. As more sophisticated analytical tools and processes are built, I need to be able to ensure that my audience understands the crucial elements of complex models and the resulting conclusions. I need to be able to explain the variances from period to period. The likelihood of increasing volatility as a result of the new valuation approach will make this communication ever more important.

Some of these developments can take a very long time to evolve, and I sometimes find it difficult to keep up with current events—never mind about shaping them. Given the revolutionary nature of these developments, however, the profession and I cannot afford to not be at the table, which is why I decided to join the SVL II Task Force. I also decided to monitor IASB activities much more actively this year, as it develops the new exposure draft for insurance accounting. It is great that the Academy, via the SVL II Task Force, is actively taking the leadership in connecting all the dots, making evolutionary changes while upholding a vision of the end game that will be revolutionary. We, as the members of the Academy, should all pitch in to effectively connect the dots!!! $



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Chairperson's Corner

by Tom Nace

Setting Objectives for the Section

In my inaugural article last issue, I mentioned that I would try to keep you informed of the section council's activities as we progress through the year. This is particularly important this year, since we are in the process of taking on a different role because of the SOA strategic plan.

One of the subtle differences in how we will operate going forward is in the setting of objectives for the section. While planning the year's activities did occur in the past, this year the process was more formalized. At our section council meeting in February, we brainstormed as to how we could benefit the section and what we could realistically accomplish this year. I would like to review with you what we have settled on as our section objectives for the year.

Overview

In the last issue I mentioned how the section's responsibilities were categorized by the formation of various "teams". Let me refresh your memory as to the section council teams:

- Membership value
- Communications
- Continuing education
- Basic education
- Research
- Marketplace relevance
- Professional community

In setting our objectives, it was only natural to define objectives for each team.

Membership Value

To improve upon the services provided to our members, we need to know what you think about those services. What do we do well? What could use improvement? What should we be doing that we don't do now? By addressing these questions we, the section council, can improve upon the value we provide to our members.

We plan to survey members to learn what you think about the services provided. The survey will be online, and it has already been drafted. We hope to have it finalized at our next council meeting and distributed to you by mid-April.

I strongly encourage you all to take the time to participate in the survey, once you receive notice of its availability. We will share the results with you later in the year.

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Communications

Our communication plan for 2005 involves some activities, that have typically been successful, along with some newer assignments. In the category of the former, we have our newsletter, which we will continue to use as one of our main communication devices, with our goal of four issues per year.

In addition, we have an objective for 2005 of building communications with the Board of Governors (BoG). In the past, there has been very little in the lines of communication with the BoG. That is about to change. In the future, we will maintain a two-way communication with the BoG, through the use of a BoG partner who has been assigned to the Financial Reporting Section—Errol Cramer.

The goal of communicating with the BoG is to make sure the Board is aware of the section's activities, while at the same time the section stays connected with the latest strategic direction of the BoG. This should serve to make both the sections and the BoG more effective in their respective roles.

I have already met with our BoG partner and we have drafted a communication plan, which we will both follow.

Finally, in the area of communications, we have set an objective of improving the section Web site. Our goal is to improve upon the content and the design, as well as making it more user-friendly. Stay posted for more on the latest developments in this endeavor.

Continuing Education

Providing continuing education to our members has always been one of the cornerstones of the services the council provides for its members. This year will be no different, as we plan to offer continuing education through the use of seminars, webcasts and financial reporting sessions at the spring and annual meetings.

The seminars that are in the works at this point include the following topics:

- Basic GAAP seminar
- Advanced GAAP seminar
- Stochastic modeling
- Practical guide to cash-flow testing
- Term insurance (jointly sponsored with the Product Development Section)

This list is preliminary. When we formalize the content and the dates for the seminars, we will notify you so that you can make plans to attend.

In addition to the above seminars, we are planning several webcasts throughout the year. Webcasts offer members a convenient and cost-efficient way of obtaining continuing education. To date, the webcast topics cover the following:

- Update on GAAP issues
- Sarbanes-Oxley implementation issues
- International accounting standards update
- SVL 2 Project update

Finally, as usual, we will provide financial reporting related sessions at the spring and annual meetings. Information on these will be provided in the preliminary (and final) programs distributed by the SOA.

As you can see, you won't be lacking for opportunities to improve your knowledge base in 2005.

Basic Education

Basic education is one area in which the sections have not been involved at all in the past. In 2005, we will be providing support to the E&E Committee in their efforts to update the examination syllabus.

In addition, we will be initiating our own review of the syllabus for financial reporting topics. Our goal is to make sure we have identified financial reporting topics that we believe should be on the syllabus. While we will not be directly involved in setting the syllabus, this objective offers us the opportunity to at least provide feedback.

By taking a proactive role, we hope to not only establish ourselves as interested parties in the process, but we also hope to be recognized as a valuable resource that can offer improvements to the basic education system.

Research

Last year we initiated a new research project, covering financial disclosure practices of life insurance companies. During 2005, we will be monitoring the progress of this project to its completion. Results of the research will be made available to our members.

In addition, we are currently supporting the update to the GAAP textbook, whose original publication was a tremendous success.

Finally, through our survey, we will be looking to our members to tell us what research projects in the future would hold the most interest for you. (Again, I stress the importance of completing the survey once it is available.)

Marketplace Relevance

The goal of marketplace relevance is to team with other actuarial organizations or sections to provide a service to actuaries who share a common interest.

In light of this, our objectives for 2005 encompass our partnering with other sections in a variety of different initiatives.

We will be teaming with the Product Development Section, as I mentioned earlier, to provide a seminar dealing with term insurance. The seminar will encompass both product design and financial reporting topics.

In addition, we will be partnering with the Management and Personal Development Section to provide a session at the Annual Meeting dealing with effective presentations for financial managers. This session is an initial attempt at offering education in the area of personal skills as opposed to technical skills for the financial reporting actuary.

We have also joined forces with several other sections (Product Development and Reinsurance) to address the issue of improving our respective Web sites.

Finally, in a social endeavor, we will team with the Investment Section in offering a joint reception at the Annual Meeting.

While sections have done some collaboration with other sections in the past, you can see that in 2005 we will take a large step forward in this area. Providing different but synergistic perspectives can only improve the benefit provided to members.

Professional Community

Professional community consists of reaming with other non-actuarial organizations to provide a service to actuaries, in which both organizations might benefit. We have postponed setting any objectives for this area until 2006.

Conclusion

So there you have it. We certainly have a full slate of activities for 2005, all aimed at making us better informed, better-trained actuaries.

I wanted to take the time to address our 2005 objectives for a couple of reasons. One, I think it is important that you are aware of all that is available to you as financial reporting actuaries. Second, I think it is important that you have an understanding and an appreciation for all that the section council does. Keeping the members in the loop as to the activities of the council is one of my personal goals this year.

While we are attempting to do a lot in 2005, if there are things that you believe we should be addressing that aren't on our to-do list, please let me know. I would be very interested in your feedback. $

Next Editor Found! Other Thoughts

by Jerry F. Enoch

Jerry F. Enoch, FSA, MAAA, is vice president and actuary with Lafayette Life Insurance Company in Lafayette, Ind. He can be reached at jenoch@llic.com.

I am very pleased that we have found the next editor of *The Financial Reporter.* Rick Browne, from KPMG in Chicago, has agreed to succeed me as editor. Rick has been serving as an associate editor and has agreed to be the next editor, in addition to serving on the section council. When Rick asks for help, I hope he gets it!

Rick has already begun taking a more active role in the editing process, and I expect him to be well prepared and chomping at the bit to take over when the time comes. Rick's increased involvement has already begun to make it easier for me.

I continue to appreciate the authors who write for us. Not only do they provide important information to the section membership, but, after having written their articles, they work diligently and cheerfully with the editors to make the articles easier to read and more useful to the readers. I hope that each of you will write a short e-mail of thanks to one of our authors. The authors' e-mail addresses always appear below their pictures in their articles.

By the time you receive this issue, there will be little, if any, time before the deadline for submitting articles for the September issue (June 6). I encourage you to consider writing an article for the newsletter. In our busy profession, there is much about which to write. The deadline for submitting articles for the following issue is expected to be September 5.

- Jerry

Status of Research Projects Sponsored by the Financial Reporting Section

by Henry Siegel

Financial Statement Disclosure Practices of Life Insurance Companies

This project describes the types of company financial statement disclosure techniques utilized by U.S. and Canadian life insurers, the extent to which these methods are standardized within the industry, the relative value these practices bring to examiners of financial statements, and the metrics and measures a company uses to quantify its risks and assess company performance.

Researcher: Ernst & Young

Status: Project is proceeding slightly behind schedule. Final report due during the 3rd quarter of 2005.

Risk-Based Capital Covariance

This project is an investigation into the covariance and correlation among various insurance and non-insurance risks generally and particularly in the tail (defined as two standard deviations from the mean).

Status: Project has stalled. Discussions are underway to decide whether and how to proceed.

Contact Henry Siegel at *hsiegel@nyl.com* if you want additional information on either of these projects.

Calculation of the Benefit Ratio in SOP 03-1

by Darin G. Zimmerman

The March 2005 issue of *The Financial Reporter* contained an article by Jay Vadiveloo, Ph.D., FSA, and Richard Bass, Ph.D. The article described two methods for calculating the benefit ratio described in AICPA Standard of Practice (SOP) 03-1. Method 1 calculates the benefit ratio as the quotient of the expectation of A and the expectation of B (where A is benefits and B is assessments). Method 2 calculates the benefit ratio as the expectation of the quotient of A and B. The authors also offer their opinion that, since A and B are negatively correlated, Method 2 (which is proven to produce a larger result) is the "correct" method. By characterizing Method 2 as the "correct" interpretation, one might infer that the authors are of the opinion that Method 1 is incorrect.

On March 8, the American Academy of Actuaries' Life Financial Reporting Committee (LFRC) met in Chicago for its quarterly meeting. The authors' article caused a very spirited discussion among the attendees, for one of the items discussed during the meeting was the LFRC's Practice Note on SOP 03-1. This note is presented in a FAQ (frequently asked questions) format. Question 26 addresses this issue and declares that both methods are being employed by actuaries implementing SOP 03-1. The practice note states that both methods constitute reasonable interpretations of the SOP and that other reasonable interpretations may exist.

The LFRC discussed two main reasons why Method 1 (the ratio of the expectations) is a reasonable interpretation of this standard. They are:

1. **Letter of the Law.** The relevant part of SOP 03-1 paragraph 26 states:

> *The amount of the additional liability should be determined based on the ratio (benefit ratio) of (a) the present value of total expected excess payments over the life of the contract, divided by (b) the present value of total expected assessments over the life of the contract... The insurance enterprise should calculate the present value of total expected excess payments and total assessments and investment margins, as applicable, based on expected experience. Expected experience should be based on a range of scenarios rather than a single set of best estimate assumptions.*

The standard does not explicitly describe the expectation of random variables, but the language comes very close in form to saying that the benefit ratio is calculated as the expectation of A divided by the expectation of B. The standard does not describe the expectation of a ratio. One can reasonably hold the opinion that the expectation of the ratio is a more theoretically correct approach; however, that conclusion would be based on an intimate understanding of the economic characteristics of certain products, not on a strict reading of this standard.

2. **Internal Consistency.** Often accounting standards need to find a practical solution to a theoretical problem. The calculation of the SOP paragraph 26 liability takes the following form:

> Historical B * (Expected A ÷ Expected B) – Historical A

This general form for liability development has the desirable qualities that it produces a zero value at inception, it produces a zero value when all liabilities have been extinguished, and along the way Expected B and Historical B will trend toward one another, just as Expected A and Historical A will also. This form works irrespective of how A and B are defined (it is a highly practical approach). However, this requires Historical B and Expected B to be defined on a consistent basis. If the benefit ratio were to be defined as the expectation of the ratio, the formula becomes:

> Historical B * (Expected [A ÷ B]) – Historical A

It is true that, as the liabilities retire, the variability of the future will diminish, forcing the final result to zero; but there is no guarantee that this will occur in a smooth or explainable fashion, since the development of the benefit ratio is less consistent with the development of historical cash flows than under Method 1. It is also true that the increased variability of Method 2 can be mitigated by using a corridor-type approach in unlocking, or perhaps by other means, as discussed below; nonetheless, Method 1 retains an internal consistency advantage over Method 2.

continued on page 12 >>

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As persuasive as these arguments may be, the LFRC does not take the position that these arguments categorically prove Method 1 is the only reasonable interpretation of the standard. We believe it is reasonable to hold the opinion that Method 2 is a more theoretically correct approach (since it implicitly recognizes that A and B are negatively correlated), and thus one could reasonably argue that Method 2 is more in line with the spirit of the SOP.

Likewise, employing a benefit ratio that is the expectation of the ratio of A and B will produce the essential characteristics of a liability formula (start and end at zero), and it is quite possible that the intermediate results will be explainable, depending on the particular facts and circumstances of the product being valued. As such, we believe Method 2 is also a reasonable interpretation of SOP 03-1, and is properly characterized as an "acceptable practice" in our practice note on the subject. The actuary should consider these—and possibly other reasonable interpretations—in the context of other aspects of the company's SOP liability calculation.

One other reasonable interpretation might include combining Method 2 with a corridor approach to unlocking the benefit ratio. The authors specifically mention greater earnings volatility as one of the drawbacks of Method 2. Tempering that volatility with a corridor approach to unlocking might be a practical way to implement a calculation that has the benefit of explicitly recognizing the negative correlation between the benefits and assessments without producing excessively volatile results that do not accurately portray the underlying economic realities of the business.

The following numerical example is presented in an effort to help the reader better comprehend what is meant by internal consistency.

Consider a variable annuity with a return of premium guaranteed minimum death benefit (GMDB) feature that has an assumed mortality rate of 2 percent and total policy charges of 2 percent of account value. The model's projection period is one year and there are only two scenarios tested, as shown in Table 1.

Table 1
Hypothetical Annuity GMDB Cash Flows

	Account Balance		*Death*	*Total*	
Scenario	*Beginning*	*Ending*	*Benefits*	*Charges*	*BR*
Up	100	120	0	2.40	0%
Down	100	80	.40	1.60	25%
Combined	200	200	.40	4.00	10%

Table 2
SOP 03-1 Liability Calculation Using Method 1

Scenario	*BR x Charges*	*Death Benefits*	*Difference*	*Hypothetical SOP Liability*
Up	.24	0	.24	.24
Down	.16	.40	(.24)	0
Combined	.40	.40	0	N/A

Table 3
SOP 03-1 Liability Calculation Using Method 2

Scenario	*BR x Charges*	*Death Benefits*	*Difference*	*Hypothetical SOP Liability*
Up	.30	0	.30	.30
Down	.20	.40	(.20)	0
Combined	.50	.40	.10	N/A

The benefit ratio would be 10 percent under Method 1 and 12.5 percent under Method 2. The liability in Paragraph 26 of the SOP is calculated as BR*charges, and is reduced by benefits paid in excess of the account balance, but is never less than zero. Using Method 1, the Benefit Ratio of 10 percent would yield the results contained in Table 2.

Using Method 2, the SOP Paragraph 26 Liability is calculated using a benefit ratio of 12.5 percent. The results of these caluclation can be found in Table 3.

This example demonstrates that the expectation of the Method 2 Benefit Ratio multiplied by assessments is greater than the expectation of benefits. Method 1 is similar to an unbiased estimator since those two quantities are equal. If the actuary believes the SOP liability should be both an unbiased estimator and should explicitly recognize the negative correlation between benefits and assessments (as Method 2 does), one could adjust the liability calculation by multiplying the Method 2 Benefit Ratio by a constant multiplier in order to remove the initial bias contained in Method 2.

> ...one could adjust the liability calculation ... in order to remove the initial bias contained in Method 2.

Finally, I'd like to thank the authors for their article. In my circle of professional acquaintances it has precipitated a discussion that I feel is much needed, and I know I have a much better understanding of the issues involved as a result of having read their thoughts on the subject. $

International Financial Reporting Standards Update

by Mark J. Freedman and Maria Torres-Jorda

This article is based on a seminar about international financial reporting standards (IFRS) sponsored by the Society of Actuaries and Ernst & Young LLP on November 30 and December 1, 2004. Attendees came from the United States, Canada, the United Kingdom, France, Italy, Singapore and Trinidad.

The seminar began with an update on the current state of the International Accounting Standards Board's (IASB's) insurance project, presented by IASB board member, Tricia O'Malley. European listed companies are required to comply with IFRS for their 2005 consolidated financial statements. The IASB originally envisioned a full fair value framework for insurance liabilities. However, given the lack of time and fierce opposition to a fair value standard, a two-phased approach was finally adopted for insurance contracts. Phase I, effective in 2005, requires companies to implement several components of the IFRS framework that do not involve significant conversion efforts and will not likely be reversed during Phase II.

Phase I and Phase II IFRS Requirements

Insurance companies must value their assets based on IAS 39, the standard that applies to financial assets and liabilities. IAS 39 requirements for invested assets, derivatives and embedded derivatives are similar to those defined in SFAS 115 and SFAS 133 for U.S. GAAP. Companies are required to classify each product as either an investment or an insurance contract. Products, such as guaranteed investment contracts, which contain only financial, lapse or expense risk, would be classified as investment contracts. Term insurance, U.S.-type universal life products and variable contracts with guaranteed minimum death-benefit features would meet the definition of insurance contracts. Investment contracts must be accounted for under IAS 39, which gives companies the option to use either a fair value or amortized cost valuation technique. Some investment contracts (e.g., U.K. unit-linked products) have service contract features which must be accounted for under IAS 18. Until Phase II is in effect, insurers must account for insurance contracts under IFRS 4, which is principally based on the company's existing accounting policies.

A summary of the key standards that apply to insurance companies is shown in Exhibit 1 below.

Once the IASB issues a standard, it must be endorsed by the European Commission before it becomes effective in the European Union (EU). Intense political activity surrounded the endorsement and application of IFRS. The EU adopted IFRS 4 in its entirety, but IAS 39 was approved only after carving out several items. The European

Exhibit 1
Key Standards for Insurers

Phase	*Assets*	*Liabilities*	
		Investment	*Insurance*
Phase I	IAS 39 for Invested Assets	IAS 39 and some Aspects in IAS 18	IFRS 4
Phase II	IAS 39 for Invested Assets	IAS 39 and some Aspects in IAS 18	Phase II Standard (not yet defined)

Central Bank and various EU banking and securities regulators expressed concerns that the fair value option might be used inappropriately when applied to financial assets or financial liabilities whose fair value is not verifiable. IAS 39's allowance of reporting all financial assets and liabilities at fair value was restricted by the EU, so that European companies do not have the choice of reporting their investment contracts at fair value, unless the liability cash flows are contractually linked to the performance of assets that are measured at market value. The IASB is continuing discussions with the European Commission, and the full fair value option may be amended to reflect the concerns of the European Central Bank and regulators.

When the challenges and efforts related to the 2005 transition appear to be over, it becomes time to start thinking about the Phase II requirements. The IASB re-started Phase II deliberations in July 2004, with a "clean sheet" approach. As Tricia O'Malley stated, the Board is not considering any specific model at this point, but any potential standard has to be consistent with the overall IFRS framework and objectives. The key goal of the IFRS framework is to produce financial information that is useful to make economic decisions. This means that the information should be readily understandable, relevant, reliable and comparable. The IASB considers that embedded value frameworks have several positive attributes, but Tricia highlighted that the inclusion of future investment returns in the valuation of the liabilities is their major pitfall. Though unclear what the final outcome is going to be, she mentioned that the Phase II model may likely be based on a prospective discounted cash flow approach.

The development of the Phase II standard has now become one of the several "modified joint projects" undertaken by the IASB and FASB. "Modified joint" implies that one Board is responsible for bringing the project to a point where a Preliminary Views Document can be released. The other board would then issue an Invitation to Comment, incorporating the Preliminary Views Document. After this stage, the project becomes "joint," and both boards are expected to issue the same or similar exposure drafts and final guidance. International convergence is now a key component of FASB's strategy, which is highly encouraged and supported by the Securities and Exchange Commission. Steve Belcher, a FASB representative, stated that despite challenges and obstacles to overcome during the process, both boards are committed to convergence in an effort to improve financial reporting.

The Survey

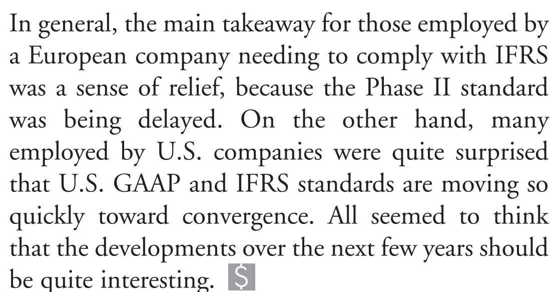
During the seminar, a survey was conducted among the audience to capture their reactions toward the issues discussed in this article. Interestingly, the majority of the attendees believes that the IASB will ultimately adopt a fair value model for insurance in Phase II and that the IASB and FASB standards will converge sometime between 2009 and 2013. Additional details about the survey results can be found in Exhibit 2.

Exhibit 2
Survey Results - Key Highlights

The survey was conducted among 35 senior insurance executives who attended the "International Financial Reporting Standards for Insurers" seminar held on November 30 and December 1, 2004 in New York City.

- 38 percent personally prefer a fair value framework for Phase II. A close second was U.S. GAAP, in its current state.
- 66 percent believe that the IASB will ultimately adopt a fair value model for Phase II.
- 69 percent think that the IASB and FASB will ultimately converge sometime between 2009 and 2013. Only 3 percent believe that convergence will never occur.
- 50 percent of those currently involved in an IFRS conversion project for insurance state that dealing with standards that are still a moving target was the most major challenge faced. System changes came in second at 20 percent.
- Of those respondents employed by companies that are required to comply with IFRS by 2005, approximately 70 percent are planning to (1) closely monitor Phase II developments, (2) try to influence the direction of the standards, and (3) pilot test different proposals. Of those employed by other companies, most are planning to assign a few people to monitor developments, but on a more passive basis until the joint IASB/FASB Phase II exposure draft is issued.

Conclusion


In general, the main takeaway for those employed by a European company needing to comply with IFRS was a sense of relief, because the Phase II standard was being delayed. On the other hand, many employed by U.S. companies were quite surprised that U.S. GAAP and IFRS standards are moving so quickly toward convergence. All seemed to think that the developments over the next few years should be quite interesting.

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Alternatives for Funding XXX Reserves

by David R. Prickitt

Five years ago, the life insurance industry thought it was changing forever: XXX was coming...level premium term insurance was going away. The product that had been so popular in the last few years was facing a huge regulation change. The premium increase necessary to support the new reserves would be enormous.

The popular press advocated buying level premium term now, before the large premium increases from the new regulation. Direct companies marketed their products in a "fire sale" environment. The clock struck midnight on January 1, 2000; the industry held its breath and waited. What would happen? From the consumers' point of view, very little happened.

The anticipated premium jump, as the regulation took effect, was small and short-lived. In fact, premiums are now at or below their pre-XXX levels. What happened? Where did all the reserves go?

Companies have used a variety of tools to maintain their premiums and comply with the new regulations. Of course, no single solution works for every company. Some of these alternatives have been used for the last five years (old school) while others are just now gaining traction in the marketplace (new school). They differ in complexity, duration and set-up cost. Some of them allow the direct writer to keep the emerging profits, while others do not.

Background

Under XXX, companies have to establish reserves during the first half of a premium guarantee period that could be multiples of the annual premiums. The companies can then release these reserves in the later part of the premium guarantee period. This creates the classic humpback reserve pattern.

GAAP reserves are set on "realistic assumptions" with a provision for adverse deviation. The reserves increase in the early part of the term and decrease later. However, the humpback is much smaller and flatter than on a statutory basis. This creates a large difference in the amount and development of level premium term insurance reserves that increases over time and decreases as the term period ends.

Old School

Self Finance

Some companies have chosen to retain the reserves on the books of the direct writing company. The increase in reserves required by XXX is offset by a decrease in surplus. In this method, the direct writer enjoys the economic benefit of its product. This method is simple to implement and no external parties share in the profits. Offsetting these benefits, companies must decide to invest company surplus or accept lower profit levels on these products to maintain competitive premiums.

Traditional Coinsurance

Other companies have reinsured large percentages of their business to traditional reinsurers. In fact, a 90-percent cession is not uncommon. The reserves transfer to the balance sheet of the reinsurer. The direct writer receives a commission at issue but gives up the share of the profits from the product after issue. This alternative is easy to implement and some traditional reinsurers have made this a large part of their business.

Affiliate Reinsurance Backed with Short-term Letters of Credit

Some larger companies have reinsured their business to an offshore, unrated affiliate. The reinsurer is established in a jurisdiction where the GAAP reserve is sufficient for the valuation standard. In these arrangements, the direct writer usually sets up liabilities equal to the GAAP reserve. The offshore entity provides reserve collateral for the difference between the statutory and the GAAP reserve. Since the reinsurer is unauthorized, the collateral must be in the form of either assets in trust or letters of credit. Usually the reinsurer buys a short-term letter of credit written by an acceptable unaffiliated bank. Reinsurance regulators have strict requirements on these letters of credit. There can be no conditions for

the ceding company to draw on the instrument (clean), it cannot be terminated before the expiry date (irrevocable) and will be renewed unless the bank provides sufficient written notice (evergreen). Banks are currently offering five-year instruments in the market that meet these requirements.

In order to be acceptable to regulators and auditors, this needs to be an "arm's length" transaction. The cost of the reinsurance must be reasonable based on how the risks are divided between the two parties. Therefore, economic benefits from the business are shared between the direct writer and the offshore affiliate.

This structure works well and can be set up quickly. Currently, short-term letters of credit are inexpensive, but they are static and do not increase. The need, however, continues to increase each year as the reserve increases in the early part of the humpback. Therefore, a company must secure more capacity than it currently needs. This could be expensive as well as inefficient. Alternatively, the company can go into the market each year to meet the current need; yet that strategy may expose the company to a pricing risk.

Additionally, there is a fundamental mismatch between liabilities with durations of up to 30 years being backed by short-term instruments. Investors and rating agencies are concerned that this structure could be vulnerable to price increases in letter of credit costs.

New School

Securitization

Securitization is considered to be the most comprehensive solution to the extra reserves resulting from XXX. The structures developed to date are quite complex and the transactions set up have been time consuming and expensive. Therefore, these transactions make the most economic sense if they are large and cover long duration business.

Under this structure, the direct writer places the reserves in a captive reinsurer. The captive reinsurer sells bonds. The proceeds from the bonds are used to purchase assets to back the reserves. The bonds are repaid over time with free cash flows from the policies, investment income from the assets and the release in reserves as the level premium term ends.

This structure can last throughout the term of the business and the ongoing cost is very reasonable. It also insulates the company from any risk from letter of credit cost increases.

Frequently, a financial guarantor is used to maintain a very high credit rating on the bonds by guaranteeing the payments to the bondholders. This gives the financial guarantor control of the economics of the transaction. Because the financial guarantor needs to be sure that the cash flows from the business are sufficient for the obligations it has guaranteed, the guarantor may require that the profits remain in the captive as protection to the bondholders. Over time, if permitted by the structure, these gains could be returned to the direct writing company as a dividend.

Securitization is considered to be the most comprehensive solution to the extra reserves resulting from XXX.

Long Duration Letters of Credit

Long duration letters of credit are a new tool to this marketplace. These instruments are used in the same structures as the short-term letters of credit mentioned above. However, they have a typical duration of 15 years. The details on these products tend to be incomplete; however, it appears that the initial source of these long duration letters of credit was the European Banks. In addition, several domestic banks have begun offering them to their best customers. They provide the same flexibility for an offshore affiliate as the short-term letter, but of course the costs are higher and they are scarce. They are also static and can have the same inefficiencies and risks as the short-term letters discussed above.

Nontraditional Reinsurance

Some non-traditional reinsurance structures have been developed to help companies deal with the extra reserves required by XXX. Both conventional reinsurers and some new providers, such as banks, offer them.

These transactions involve an offshore reinsurer providing collateral based on letters of credit or assets in trust for the difference between statutory and GAAP reserves. These transactions meet the statutory requirements for risk transfer and allow the direct writing company to take reserve credit. They can also be written to match the duration of the liabilities. For some companies, this could be 20 or 30 years.

Frequently, these transactions include an experience refund feature that returns the profits of the business to the direct writing company. The ceding company only pays for the reserve relief related to the difference between the statutory and GAAP reserve.

continued on bottom of page 23 >>

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Demystifying Life Insurance Securitization: XXX and AXXX Securitization Issues and Considerations

by Steven D. Lash and Rebecca Kao Wang

Life insurance securitizations have become a burgeoning area receiving a significant amount of recent attention. A number of recent deals addressing the various capital needs of the life insurance industry have been funded. Although life insurance securitization is not yet as prolific as other types of asset-based securitizations, such as mortgages and loans, significant momentum is building. One specific need facing the life insurance industry and receiving particular focus is the funding of the "hump-backed" reserves associated with Regulations XXX and AXXX. With the belief that statutory reserves under these regulations are overly conservative and the fact that traditional methods of reserve funding are becoming increasingly difficult and costly, securitization has been used as a vehicle to alleviate the capital strain caused by these statutory requirements. The magnitude of the capital need has been estimated by some to be in the $100 to $150 billion range in the coming decade, depending upon the level of product sales. Securitization could provide this much-needed capital for the industry and potentially become a more cost effective form of long-term financing. This article describes the basic building blocks used in XXX and AXXX securitizations, as well as some of the issues and considerations of which the parties involved need to be mindful when considering securitization as a funding option.

Background

Introduced in 2000, Regulation XXX significantly increased the U.S. statutory reserve requirements for term life insurance writers. In some cases, these statutory reserves have risen to over eight to 10 times that of an "economic" type reserve, such as a FAS 60 reserve under U.S. GAAP. The XXX reserve typically demonstrates a hump-backed pattern, increasing rapidly in early years until it peaks around the mid-point of the level term period. Although the use of the 2001 CSO mortality table may lower the reserve, it does not eliminate the large gap between the statutory reserve and the economic reserve. This difference is even more acute for preferred underwriting classes, where the valuation mortality table deviates most from that expected in pricing.

The high XXX reserves cause considerable capital strain for insurers. Many companies deal with this by ceding the business to offshore reinsurers where local statutory reserving requirements are less onerous, such as permitting the use of U.S. GAAP. In order for an insurer to take reserve credit on their U.S. statutory statement, the amount of the credit taken needs to be funded, the most popular form of financing being the use of a LOC.

Two particular issues have arisen in relation to this traditional solution. The first relates to the usage of LOCs. Industry observers are forecasting a rapid increase in the cost of LOCs (possibly as much as 10 times!), as the demand increases along with the rise in XXX reserves. There is also the potential risk of LOC shortages, as banks reach internal credit concentration limits. Additionally, with the passage of BASEL II, a new capital adequacy framework for banking organizations, the reserve requirements for banks issuing LOCs have increased substantially. Furthermore, the LOC solutions used are typically annually renewable, making them a short-term solution to a long-term liability. Rating agencies have expressed their discomfort in the use of short term LOC to back reserve credits for longer-term policies.

The second issue arising with the traditional reinsurance solution is the consolidation of the reinsurance market. As there are fewer reinsurance companies willing to assume XXX-related risks, pricing has strengthened. This reduction in reinsurance capacity,

along with the related higher cost, has caused some ceding insurers to have higher than acceptable concentrations of risk.

Universal life (UL) policies with secondary guarantees are subject to Regulation AXXX (also known as Actuarial Guideline 38). Reserves under AXXX demonstrate a similar "hump-backed" pattern as XXX with longer tails since universal life typically has a longer average policy life than term life products. The reinsurance market for the AXXX reserve is very limited and most insurers currently retain the risk. As UL with secondary guarantee products evolve and grow, the burden of increased capital needs will emerge for the industry. The emergency adoption of an amendment to New York Regulation 147 in December 2004 resulted in higher reserves for some New York-licensed companies writing certain forms of UL with secondary guarantees. In addition, the ongoing discussion by NAIC's Life and Health Actuarial Task Force (LHATF) adds an extra layer of complexity and uncertainty to the AXXX reserve debate.

In order to address the looming capital need associated with XXX and AXXX reserves, many have turned to alternate capital-funding solutions, among which securitization has been considered the more elegant solution and has increasingly been gaining popularity.

The Securitization Solution

Securitization is the process of repackaging certain assets or cash flows for sale in the capital markets as debt securities that pay periodic coupons as well as the eventual repayment of principal. Investors buying these securities will assume the risks inherent in the underlying cash flow. In order to provide investors with a choice of investments with respect to their risk appetite, these debt securities are typically divided into "tranches," where each tranche may have different coupon payments, payment terms and risk level.

Exhibit 1 is a simple hypothetical securitization example where the original cash flow is divided into three tranches and sold at par. The investors for the different tranches will be rewarded according to the level of risk assumed. The investors owning tranches A and B will be paid first, with the equity investors receiving the remaining cash flow. If there is an unexpected drop in cash flow, such as due to adverse mortality experience, the equity investors will bear the risk first. As the cash-flow performance worsens, losses may eventually need to be borne by the other tranches. The rating agencies calculate the rating of each tranche based on scenario analyses such that the senior most tranche is affected only upon the most extreme negative performance experience. Conversely, if there is an unexpected increase in cash flow, the equity investors will enjoy the additional income while investors for tranches A and B receive steady coupon payments. As the equity investors assume the highest volatility, they are compensated with the highest return, compared to investors in tranches A and B.

Securitization is the process of repackaging certain assets or cash flows for sale in the capital markets as debt securities that pay periodic coupons as well as the eventual repayment of principal.

A common type of securitization in the asset world is a mortgage-backed security (MBS), where the cash flows from a pool of mortgages are sold as debt. Insurance securitizations follow a very similar process, except that the cash flows are derived from liabilities instead of assets, and the risks are related to insurance risks such as mortality and lapsation instead of prepayment.

Exhibit 2 on page 20 is an example of how an XXX or AXXX securitization structure might be structured. This sample is purely hypothetical and is not intended to depict any existing deal, but contains common building blocks found in some of these transactions. For the forthcoming discussion, we will suppose a block of term insurance reserves under XXX is being securitized. Similar concepts would apply to UL reserves under AXXX as well.

The original company is either a direct writer or a reinsurer looking to finance its mounting XXX reserve. The company typically would set up a captive reinsurer and cede off its block of term policies under a coinsurance treaty. Many companies choose to set up captives either offshore or in states that offer favorable regulatory accounting treatment, such as allowing the use of GAAP reserves for the captive's regulatory reporting.

There are many variations to the structure in Exhibit 2. A holding company may be set up as the parent to the captive reinsurer. Many prefer this type of holding company structure, since the original company does not directly own the captive reinsurer, and it is less likely that the original company will need to reflect the captive reinsurer on its statutory financial statement.

continued on page 20 >>

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Exhibit 1: A Simple Securitization Example

Pricing Base Case							
			1	2	3	4	5
Liability Cash Flow			30	30	30	30	330
	Coupon Rate	**NPV**					
Tranche A	9%	100	9	9	9	9	109
Tranche B	10%	100	10	10	10	10	110
Equity			11	11	11	11	111
Par = $100 = Tranche NPV, Tranche Discount Rate = Coupon Rate							
Unexpected Drop in Cash Flow by $5 each year							
			1	2	3	4	5
Liability Cash Flow			25	25	25	25	325
	Coupon Rate	**NPV**					
Tranche A	9%	100	9	9	9	9	109
Tranche B	10%	100	10	10	10	10	110
Equity			6	6	6	6	106
Unexpected Increase in Cash Flow by $5 each year							
			1	2	3	4	5
Liability Cash Flow			35	35	35	35	335
	Coupon Rate	**NPV**					
Tranche A	9%	100	9	9	9	9	109
Tranche B	10%	100	10	10	10	10	110
Equity			16	16	16	16	116

Exhibit 2: A Sample Securitization Structure

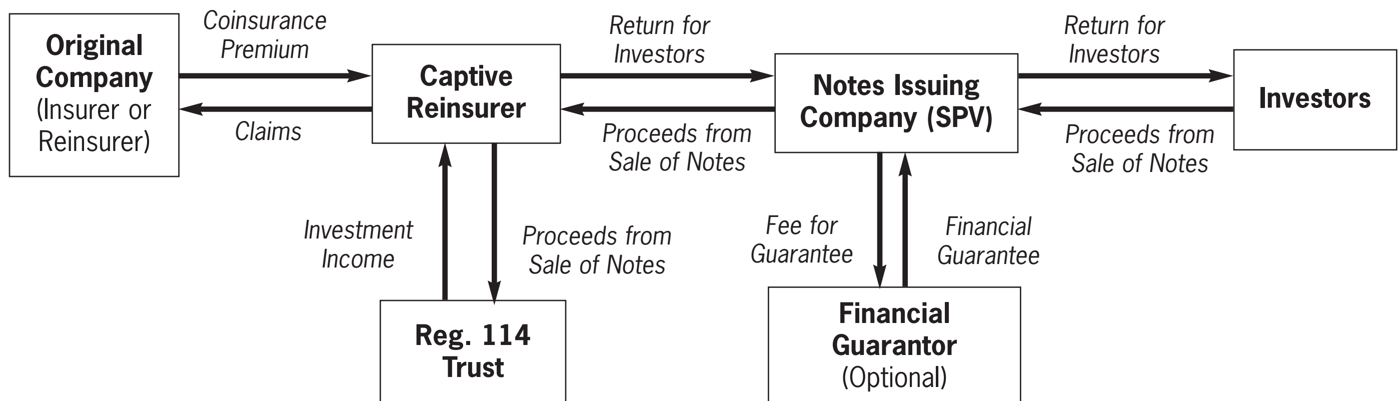

Exhibit 3: Financial Guarantee Example

Unexpected Drop in Cash Flow by $25 each year Tranches A and B Guaranteed by Financial Guarantor							
			1	**2**	**3**	**4**	**5**
Liability Cash Flow			5	5	5	5	305
	Coupon	**NPV**					
Tranche A - Wrapped	9%	100	9	9	9	9	109
Tranche B	10%	68	0	0	0	0	110
Equity			0	0	0	0	86
Financial Guarantee			4	4	4	4	0

In order for the original company to obtain the needed statutory reserve credit, an important consideration is to ensure that proper risk transfer has occurred. Statement of Statutory Accounting Principles (SSAP) No. 61 and Appendix A-791 of the NAIC's Accounting Practices and Procedures Manual must be followed. For example, for a term policy, mortality and lapse risks must be transferred, whereas a universal life policy requires the transfer of mortality, lapse, asset credit quality, reinvestment and disintermediation risks. A reinsurance treaty that transfers only the secondary guarantee risk may not pass the definition of risk transfer. Failing to qualify for risk transfer in a reinsurance arrangement could result in the loss of favorable insurance accounting treatment for the original company.

Special Purpose Vehicles (SPVs, and also known as Special Purpose Entities, or SPEs) are often used in securitization. An SPV is set up to serve a specific purpose, such as raising capital and servicing investors in a securitization. It performs little or no other activities. The investors have claims to assets only in the SPV and have no recourse to the original company. Similarly, the creditors of the original company have no claims to any assets in the SPV.
The equity holder of the SPV is often the original company, an affiliate or an investment bank, and controls the SPV's activities, including the issuing of debt or equity securities, as well as selling notes to the investors. In GAAP accounting, SPVs are subject to complex accounting requirements. For example in the United States, if an SPV is determined to be a Variable Interest Entity (VIE), as defined in Financial Accounting Standards Board Interpretation No. 46 (FIN 46), which contains complex guidance regarding SPV consolidation, FIN 46 would apply. Otherwise, different accounting requirements, such as Accounting Research Bulletin 51 (ARB 51), Statement of Financial Accounting Standards No. 94 (FAS 94), and Accounting Principle Board Opinion No. 18 (APB 18) may be applicable. Under International Financial Reporting Standards (IFRS), separate requirements apply, such as Standing Interpretations Committee (SIC) 12. A discussion on SPV accounting requirements is beyond the scope of this article. Qualified accountants, tax and legal professionals should always be consulted in any transaction.

Once the securitization cash flows are repackaged into different tranches, notes will be sold to the investors. The proceeds from the sale of the notes

continued on page 22 >>

A company doing a securitization needs to be prepared for the scrutiny of its business and practices by actuaries, accountants, lawyers, investment bankers, rating agencies, regulators and financial guarantors.

will then be passed from the SPV back to the captive reinsurer to be placed in a Regulation 114 trust. The cash flows used in a securitization are derived typically from captive reinsurers' profits and the Regulation 114 trust investment income. Regulation 114 of the Official Compilation of Codes, Rules and Regulations (11 NYCRR 4) of the New York State Insurance Department specifies rules on the use of a trust account to fund reserve credits under a reinsurance arrangement. For example, only certain types of investments are allowed in the trust, and equity investments are not permitted. The trust is typically set up at a bank, which acts as the trustee, while the beneficiary of the trust is the original company, with the grantor being the captive reinsurer.

The recent XXX deals completed were "wrapped" by third party financial guarantors (also known as monoline guarantors) to assist in the sale of the notes by boosting the credit rating of the notes. These companies typically guarantee, or "wra,p" the deals by guaranteeing the investors payment of interest and principal in certain tranches. In our prior example, tranche A could be "wrapped" so that if the liability cash flows do not support the payment of the principal and interest, the financial guarantor would be responsible to provide the remainder, as shown in Exhibit 3. In this example, tranche B and the equity investors will receive no periodic payments and limited principal payments.

By having some of the notes wrapped, higher proceeds can be raised and the wrapped notes will receive a high credit rating. The SPV pays the financial guarantor a premium to compensate for the risks the guarantor assumes. The actuarial risks these monoline companies are guaranteeing require significant analyses to be performed.

Many constituents are involved in the structuring of a life insurance securitization deal. Actuaries are needed to construct actuarial models in order to project liability cash flows to be securitized and perform sensitivity testing to analyze the risks of being unable to pay down the various tranches of the debt. Furthermore, actuaries need to carefully evaluate the financial impacts on various accounting bases, such as statutory, economic and GAAP. Consolidated GAAP impacts would be more involved and complicated because of the potential FIN 46 issues. GAAP earnings emergence patterns need to be carefully studied as well. Financial guarantors may perform due diligence on the actuarial projections to properly understand the insurance risks they are assuming, such as mortality and lapsation. Accountants are closely involved, especially in dealing with the complex rules for the SPVs and the accounting ramifications. Investment bankers are needed to help structure and market the deal. Lawyers are needed to review the legality of the structure. Rating agencies are intimately involved throughout the process to provide proper ratings for the resulting securities. Finally, the regulators are involved for the final approvals. In a recent transaction, there were 17 different professional firms involved in some capacity! The sheer number of parties involved is an indication of the complexity of these securitization deals.

The New Frontier

Life insurance securitizations are complex transactions, given the nature of the business involved. In the near term, these transactions will continue to be time consuming and costly due to the intricate modeling and analyses required. Moreover, as new players and non-insurance investors try to get through the initial learning curve, additional time and cost may be required. A company needs to be prepared for the scrutiny of its business and practices by actuaries, accountants, lawyers, investment bankers, rating agencies, regulators and financial guarantors. The development of sound actuarial models, assumptions and experience studies is crucial. Processes and controls must be top notch in this new frontier in life insurance company capital management. The fact that a number of transactions has been completed to date is a good indication of the capital markets' growing acceptance of the inherent insurance risks involved.

XXX and AXXX securitizations are two of the many forms of securitizations in the United States allowing the life insurance industry to tap into the vast capital market for funding. Many European companies have used securitization to allow for more efficient use of capital, such as embedded value securitizations. The current activities in the United States could catapult securitization to be a leading capital solution for the life insurance industry. $

What's Outside

This is a listing of some articles published elsewhere that may interest financial reporting actuaries. If you would like to recommend an article for inclusion in this list in a future issue, please e-mail the editor.

"Asset Adequacy for the Long-Term Care Product: A Case Study" is a brief case study of the initial asset adequacy testing of a small, multi-line insurer with long-term care insurance. Short and easy to read. By Amy Pahl. *Long-Term Care News*. December 2004.

"AXXX Regulation: An Interview with Bradley M. Smith of Milliman, Inc." is a well-paced, easy to read interview that addresses a number of issues about this current hot button. There are related articles in the same newsletter. 2-1/2 pages. By John O. Nigh. *Reinsurance News*. August 2004.

"The Universal Life Work Group" is an excellent companion piece to our cover article, "SVL II: Connecting the Dots." It places the work group in context by listing the various AAA work groups that are addressing different aspects of principles-based reserves and capital requirements, including the SVL II Work Group. It succinctly describes "rules-based approach" and "principles-based approach," and it explains when a stochastic approach is appropriate. After identifying the challenges the work group faces, it describes the eight subgroups that are doing the work. Four pages. By David E. Neve. *Product Matters!* March 2005.

"The End of a Tumultuous Year" provides a summary of events of a regulatory nature during 2004, including VA reserves and RBC, Actuarial Guideline 38, reinsurance reserve credits on YRT reinsurance, etc. Three pages. By Larry M. Gorski. *Product Matters!* March 2005.

These transactions are more difficult to set up than traditional reinsurance arrangements because they can expose the reinsurer to substantial risk if the transactions are not properly structured. The reinsurer has gains only up to the fees with all the additional profits returned to the direct writer. If the business has adverse experience, the losses can be substantial. Therefore, the reinsurer seeks a higher level of safety to ensure that there should be significant excess cash flows to cover the fees and provide a recapture incentive for the direct writer. This solution has the same mismatch risk as affiliate reinsurance backed with a long duration letter of credit. However, there is an offsetting advantage. This solution does not impact the direct writer's letter of credit capacity.

Conclusion

In the last five years, the industry has been very creative in finding alternatives to the higher reserve requirements of XXX without penalizing the consumer with higher premiums. These solutions will become longer term, easier and more cost-effective over time. In addition, future generations of solutions can be expected as consumer demand continues and statutory reserves grow. $

Articles Needed for *The Financial Reporter*

Your ideas and contributions are the most important component of this newsletter. All articles will include a byline to give you full credit for your effort. For those of you interested in working further depth on *The Financial Reporter*, several associate editors are needed. For more information, please call Jerry Enoch, editor at (765) 477-3220 or Rick Browne at (312) 665-8511.

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Preferred Format

Please e-mail your articles as MS Word documents (.doc) to the newsletter editor. Headlines are typed upper and lower case. Please use a 12-point Times New Roman font for the body text. Carriage returns are put in only at the end of paragraphs. The right-hand margin is not justified. Author photos are accepted in .jpg format (300 dpi) with dimensions of at least 2” x 2” to accompany their articles.

If you must submit articles in another manner, please contact Joe Adduci, (847) 706-3548, at the Society of Actuaries for help.

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Thank you for your help.