The **Actuarial Review**

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Volunteer Honor Roll on page 24.

INSIDE THIS ISSUE

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Editor's Notes

By Paul E. Lacko

We reluctantly say farewell to two long-time contributors, and we joyfully welcome four new volunteers to *The Actuarial Review* staff this issue.

The bad news is that Kendra Felisky, who has served as *Actuarial Review's* U.K. Correspondent for more years than we think prudent to mention, is moving on. Throughout her career as correspondent, she has written an intelligent, informative and entertaining column. We have always relished the subtle *flavour* of sophistication and elegance that a dash of the King's English imparts to Kendra's articles. You done real good, Kendra, and we wish yez da best!

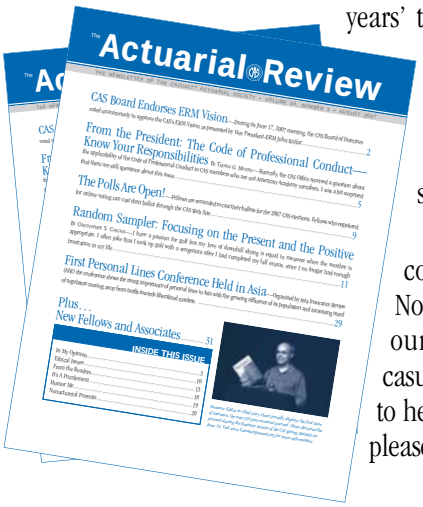
The good news is that Jonathan Bilbul offered to assume the post of U.K. Correspondent, and we gratefully accepted. We look forward to publishing Jonathan's reports of U.K. actuarial news and events.

The bad news is that Steve Philbrick, who created the "Brainstorms" column; has stepped down as its editor. Steve actually wrote most of the "Brainstorms" columns published in *The Actuarial Review* over the years, leaving us an amazing collection of thoughts, musings, observations, and questions still to be answered.

The good news is that Wendy Peng, Leslie Marlo, and new Fellow Eric Savage have volunteered to serve as copy editors. They will be working with the many additional volunteers who write the articles you read here to inform you quickly and entertain you frequently.

You, too, can become a volunteer on *The Actuarial Review* staff! One way to step forward is to respond with a "1" on the CAS Participation Survey. Another way to step forward is to, well, step forward. We are always willing to accept unsolicited e-mails and phone calls from willing volunteers, especially if you can devote a few hours a few times a year to writing an article. If writing is not (yet) your forte, the *AR* editorial staff can help you tailor your first draft into a finished product guaranteed to appear in the next issue of *The Actuarial Review*.

We would like to see "Brainstorms" continue as a regular column, even if it takes a team of people (2-4) to replace Steve Philbrick. Now, you might describe "Brainstorms editor" as a research-oriented CAS member who actually has a brainstorm at least once every calendar quarter, and on a wide variety of topics over several years' time. We believe this is too restrictive; you can be a successful "Brainstorms" editor if you *know* people who fit that description and are willing to talk to you for an hour at least once every calendar quarter. Give it some thought.



We also seek several additional international correspondents, CAS members outside the North American continent to help us expand our international coverage of the property/casualty actuarial profession. If you are willing to help by writing an article once or twice a year, please let us know. AR

Do You Have What It Takes?

When the multi-year trend of declining auto frequency finally turns, will you be prepared to be the first to recommend that your company raise rates?

When the reinsurance industry has another good year, will you be prepared to hold the line on rates rather than follow the market trend toward softening prices?

When profit margins get thin and management is looking for income, will you do your part to maintain reserve adequacy?

When that assignment comes along that you're not really qualified to take on, will you have the courage to say no?

It's easy to follow the crowd rather than be the lone voice in the wilderness. It's easy to provide the answer management is looking for rather than the answer they need to hear. It's easy simply to disagree with management, but if we don't present a convincing case to influence management's decision, then what value do we generate as professionals?

This past March the CAS Board adopted a revised Centennial Goal that states in part: "CAS members will advance their expertise in pricing, reserving, and capital modeling, and leverage their skills in risk analysis to become recognized as experts in the evaluation of enterprise risks, particularly for the property and casualty insurance industry." But these are just words on paper unless we step up to the challenges they present.

As an actuary, you have the ability to make a difference in your organization or for your clients. It's easy for companies to make money when times are good—the true test comes when times are tough. But who is better prepared to help management identify options for dealing with tight market conditions and to evaluate the potential financial consequences of those options? You can identify the risks associated with potential decisions and make sure that management is making informed decisions. But this takes courage and fortitude! You must be ready and able to speak up and to back up what you say with relevant and convincing analysis.

If you feel like you need to brush up your analysis techniques in order to do a better job of evaluating the risks your organization or client faces, take advantage of the many continuing education resources offered by the CAS or other sources. If you have trouble making your analysis compelling, there are resources to help improve your communication and presentation skills.

Ultimately, the work that each of us does reflects on the profession as a whole. It's up to you! Do you have what it takes?

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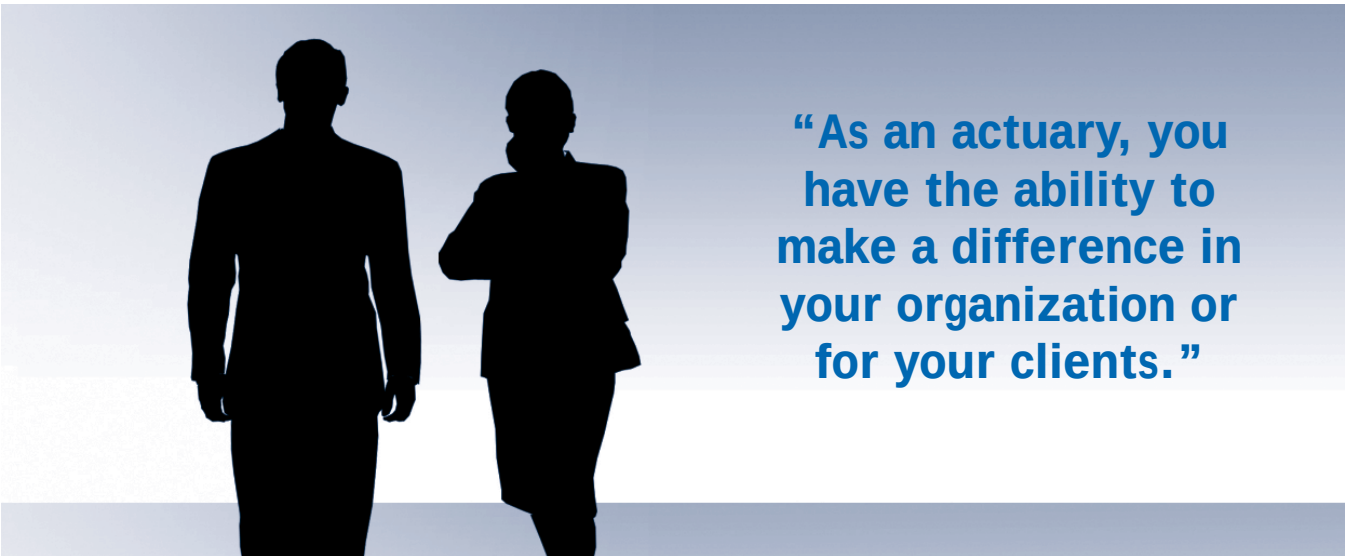
On a different note, let me close by saying how honored I am to have had the opportunity to serve as president this year. I want to thank my fellow CAS Board and Executive Council members, Cynthia Ziegler, the office staff, and the many CAS volunteers for all they do to make the CAS such a vibrant organization. It's been great working with you this year! AR



PAUL E. LACKO

An Estimate by Any Other Name

What words do we actuaries use among ourselves to refer to the work we have done and its results? What happens when we use the same language with non-actuaries? How do our words differ from the words other people use? Actuaries will generally speak the technical lingo of the trade, of course, among themselves. Experienced actuaries know full well that most non-actuaries just don't comprehend this foreign language, which confusingly sounds a lot like the native tongue. New actuaries often have a hard time comprehending that such difficulty in comprehension even exists, and a harder time comprehending that rectifying the situation usually falls to the actuary. And the standard methods of helping a non-native speaker aren't effective: speak m-o-r-e s-l-o-w-l-y; enunciate key words MORE LOUDLY; repeat important phrases, repeat important phrases, repeat important phrases.

Both groups, the actuaries and the non-actuaries, experience the communication, or lack thereof, as dysfunctional. Each group perceives that the problem lies with, and should be solved by, the other group. The larger group, of course, dictates the terms of the compromise. It falls to the actuaries to do whatever is necessary in order to express themselves in the native language as spoken and understood by the majority. The non-actuaries will not sit for an intensive course in conversational "actuarese."

This might be a serious challenge, judging by a letter published recently in *Contingencies*. The writer argues that "the actuary doesn't do any predicting. If we did, we'd be judged by how well we predict… The quality of the actuary's work doesn't depend on how close the projection was to the actual experience."

Speakers of the native language would certainly reply that actuaries *do so* "predict," and you can look it up in any standard dictionary! Here are a few definitions from mine:

> **Predict (v):** to declare in advance; to foretell on the basis of observation, experience, or scientific reason.
>
> **Prediction (n):** forecast
>
> **Project (v):** to plan, figure, or estimate the future; to communicate vividly esp. to an audience.
>
> **Projection (n):** an estimate of future possibilities based on current trends.
>
> **Estimate (v):** to judge tentatively or approximately the value, worth, or significance of; to determine roughly the size, extent or nature of.
>
> **Estimate (n):** a rough or approximate calculation; a numerical value obtained from a statistical sample and assigned to a population parameter.

Well, gee, these words certainly sound appropriate to describe actuarial work. What's the point in quibbling with native speakers (who outrank us) over small connotative distinctions? As far as native speakers are concerned, actuaries estimate, predict, project, forecast, and probably a lot else besides.

Let's think a bit about "quality," as well. The "quality" of my work is reviewed frequently, and it undergoes a formal review once each year. As defined by the non-actuaries to whom I report, "quality" most definitely includes how close my projections are to the actual experience. This is not measured by how close any individual projection is to the actual experience that emerges, but overall I need to maintain a decent batting average. Batting average might not be the best analogy here; a professional baseball player who can maintain a .350 average is considered top-rank. Batting .350 gets me a grade of "Needs Improvement."

What do the writer's words say to non-actuaries in their native language? And why should we feel surprise, even resentment, when non-actuaries in senior management complain that actuaries lack "business sense"? Actuarial work—*any* work, for that matter—is *always* judged retrospectively in view of results. "Quality" and "value" are essentially synonyms to most native speakers. Senior managers want value for the dollars they spend on actuarial services.

I think I understand what the writer is trying to say, and I'm sure you do, too. Frank Schmid and Jonathan Evans express it better in their Winter 2007 *Forum* paper, "Forecasting Workers Compensation Severity and Frequency Using the Kalman Filter."

> Forecasting is a signal extraction and signal extrapolation exercise. Signal extraction is the process of filtering out measurement errors from empirical data. Measurement errors include the total impact from all sources of noise, deviations of the empirical data from the underlying signal that do not affect the expected values of future observations. In forecasting, the signal is the quantity of interest, because it is

> the signal that determines the expected values of future observations…Specifically, it is the objective of a forecasting model to elicit from historical observations the process that generates the (unobservable) signal. Because the forecasting model replicates the data-generating process of the signal (instead of fitting historical observations), the quality of these models cannot be judged by the fit to the observed data….

If you and I can translate this technical language into the vernacular, we might just score a few quality points that boost our batting averages.

Senior managers can be made to understand that actuarial models are concerned with "right methods" as opposed to "right answers." They can understand that actuaries provide signals, and, perhaps more importantly, that actuaries can provide useful information about the noise. Noise is very important to senior managers. They cannot ignore or eliminate the noise. It means risk and uncertainty, which can be retained, managed, hedged, or transferred, but never eliminated or ignored. Still, "right methods" have no value unless the actuaries who apply them season after season show consistently high batting averages.

Ultimately, I fear, differences in backgrounds, cultures, and work environments will always cause our audiences to derive meanings from our communications that we did not intend. Language can only indicate the signal of our intentions. Noise, inherent and unavoidable, distorts the signal. But I believe we can reduce the noise to a tolerable level. When in Rome, speak as the Romans.

This brings to mind a song by a gifted singer/songwriter from the late 1960s and early 1970s you probably never heard of, Tom Rapp. He recorded "Song About a Rose" with his group, Pearls Before Swine, on an album called "The Use of Ashes." I leave you with the last two lines of the song:

And even God can only guess why or where or when or if the answers all belong

And you and I, we sing our song about a rose or perhaps the shadow of a rose. AR

Kollar Voted President-Elect; Carlson to Become CAS President

Arlington, VA—Balloting for the CAS election closed on August 31, 2007 and tellers verified the election results. A total of 1,118 Fellows voted in this year's election, or 37% of the Fellows. This compares to 1,268 Fellows or 44% for last year.

Receiving 979 votes, John J. Kollar has been voted in as president-elect. Kollar, a 1975 Fellow, currently serves on the CAS Executive Council as the Vice President-ERM. His CAS governance experience includes a term on the Board of Directors from 1998 to 2001 as well as service on numerous CAS committees relating to ERM, education, and long-range planning. Christopher S. Carlson was elected president-elect in 2006. He will become CAS president at the close of the 2007 CAS Annual Meeting.

CAS Fellows elected Albert J. Beer, David R. Chernick, John P. Tierney, and Michael G. Wacek to the CAS Board of Directors.

At its meeting in September, the CAS Board elected Kevin G. Dickson as Vice President-ERM and Ralph S. Blanchard III as Vice President-International. The Board re-elected the following members to serve as Vice Presidents: Kenneth Quintilian, Administration; James K. Christie, Admissions; Patricia A. Teufel, Marketing and Communications; Andrew E. Kudera, Professional Education; and Roger M. Hayne, Research & Development. Immediate Past President Thomas G. Myers will chair the CAS Board.

The Actuarial Review congratulates the new president-elect, board members, and vice presidents. These Fellows will assume their positions at the close of the 2007 Annual Meeting this month in Chicago. AR

Give to the Actuarial Foundation

Make a difference today and support the dynamic programs of The Actuarial Foundation. As the only independent philanthropic organization of the actuarial profession, you can be proud of the positive impact the Foundation's programs have had, and will continue to have on society. Make a gift to the Foundation today. Gifts are *100% tax-deductible*. Thank you. To make a contribution, visit www.actuarialfoundation.org/donor/donor.htm. AR

Communicating Uncertainty Effectively—(The Author Responds)

Dear Editor:

I read John Captain's comments on "Communicating Uncertainty Effectively" (*The Actuarial Review*, August 2007) and would like to thank Mr. Captain for reading my paper and for contributing to our professional dialogue on reserve variability. I agree with Mr. Captain that we must exercise great care not to express too much "certainty" when we describe the uncertainty of unpaid claim liabilities using distributions. To not exercise care would be analogous to the climatologist thinking long-term weather forecasts allow for the prediction of the exact date, time, and location of the most severe hurricane in 2008. Like the climatologist's models, our models will help us to identify general patterns and trends; guessing the exact liability probably has longer odds than the lottery.

Actuaries understand the imperfections of our methods and we express them in the caveat section of our reserve opinions. It seems like a natural extension of this understanding to continue to exercise care in expressing uncertainty about our models (distributions) like we currently do when expressing uncertainty about the paradoxical "certainty" of our methods (point estimates).

In some ways, I think the work of economist Frank Knight will help us address the issue raised by Mr. Captain. In *Risk, Uncertainty and Profit*, Knight's distinction between risk and uncertainty is that risk refers to unknown outcomes with *quantifiable* probabilities. While risks can be insured against, uncertainty cannot. Yet all entrepreneurship involves bearing uncertainty (that cannot be estimated or transferred away).

With this distinction in mind, I think we can effectively explain to our constituents that we are attempting to quantify the probabilities of reasonably possible outcomes (risk). The future is unknowable, meaning that unpredictable and unquantifiable events will affect future settlements on claims we are attempting to quantify today. Any notion of certainty is built on the assumption that future events are predictable and that the model itself is infallible. These are both dangerous assumptions: risks can change, model risk can never be modeled away, and the only certainties left are the old fallbacks—death and taxes.

Our challenge as an industry is to communicate our estimates in a measured way so that decision-makers can take advantage of the emerging information environment. The judgment of the actuary should be relied on to quantify and express risk to the best of our ability, but it remains the responsibility of management to act prudently with that information and recognize the potential *uncertainties*.

As the information environment evolves, management will increasingly look to actuaries to help them understand the nature of risk. Inherent uncertainty is one of risk's many faces.

—Mark R. Shapland, FCAS, ASA, MAAA

Communicating Uncertainty Effectively—(Another Reader's Response)

Dear Editor,

Great paper; great letter. (Article by Mark Shapland, "Loss Reserve Estimates: A Statistical Approach for Determining 'Reasonableness,'" *Variance*, Vol. 1, No. 1:20-148; and letter by John Captain, *The Actuarial Review*, August 2007.)

I too sympathize with the need to satisfy our customers and publics effectively by providing information on the "uncertainty" in needed reserves. I don't think it's all that much of a problem. We lack the will to communicate clearly and effectively. We intentionally cloak our work in mystery to guard the franchise.

The very first thing we should say is, "These results are estimates, and are sure to be wrong, very possibly by a lot, if current losses develop significantly different than prior losses have developed."

Basically, what we have are triangles containing actual data, and what we need are rectangles, the rightmost column of which will be the accident year ultimates. An effective way to communicate "uncertainty" is to say, for *each accident year* from the most recent to the earliest, "Ultimate losses are *Y*% greater than actual losses. This is the cumulative loss development factor. *At the same stage of development* in prior periods, ultimate losses are *A*%,...., *N*% greater than actual losses."

People who care about and understand insurance financials will ask the resulting obvious question very swiftly: "I see that prior factors for this accident year were 2.1, 2.0, 2.2, 2.1, and 2.0. Why are you using 1.3?"

To the extent that there is a discernible and obvious deviation in expected development from past actual development (as expressed in the cumulative development factor), the burden is on the actuary—and management—to clearly set forth and explain the reasons for the deviation.

Alternatively, we could say, "We do not predict losses. We estimate losses. The only way we can estimate losses is to look at how past losses grew to ultimate, and assume those patterns will continue. Then we quantified the important intervening changes that we found present, and we adjusted the estimates accordingly, and here's why." (Or, "We did not adjust the estimates, and here's why.")

Hopefully, the explanation will not sound anything like this: "We hired consultants who told us there were problems in our claim function, so we hired some more consultants to fix those problems. Management told us the problems are fixed and everything is now fine. We incorporated the expected effect of those changes immediately (as 'advised' by management), and we're sure the data will eventually support the changes."

The only issue is this: have the estimates been compiled responsibly and professionally?

—Ed Shoop, FCAS

Volunteers Go "Above and Beyond"

The annual Above and Beyond Achievement Award (ABAA) celebrates the spirit of volunteerism by recognizing one or more CAS members who have made recent contributions that clearly exceed what is normally and reasonably expected. The CAS has bestowed the 2007 awards to Ralph Blanchard, Raji Bhagavatula, and Robert Campbell.

Ralph Blanchard has made many contributions to the CAS Syllabus of Examinations over the years. Ralph's background in accounting and audit issues make him particularly well suited to keeping the Insurance Accounting Principles section of the Exam 6 Syllabus up-to-date. His primary responsibility, as a Part Specialist on the Syllabus Committee, is to create detailed learning objectives. In addition, Ralph has spent countless hours developing study materials that became part of the *Syllabus*. Ralph's latest study note, "Basic Insurance Accounting—Selected Topics" makes it easy for candidates to understand the fundamental concepts of accounting without having to wade through pages of jargon. Other contributions to the *Syllabus* from Ralph include the papers "Premium Accounting," published in 2005, and "Accounting Concepts for the Actuary," published in 2003.

Raji Bhagavatula is recognized for her role in leading a drafting task force of the Actuarial Standards Board Reserving Subcommittee. The subcommittee's persistence and patience was tested many times during the development of the new ASOP No. 43. The efforts of the subcommittee spanned more than a couple of years—years that were not without debate and controversy. But because of these efforts, the actuarial profession has a new working standard for actuaries.

Robert Campbell is recognized for his role as chair of the Data Management and Information Educational Materials Working Party, which was formed in December 2005 and charged with identifying key educational resources on data issues for actuaries. The output from this working party has been prolific, with a number of work products developed to educate students and practitioners. This Working Party has developed and delivered both basic and professional education materials for actuaries via meeting and seminar presentations, articles in *The Actuarial Review*, and papers published in the *CAS Forum*.

The Above and Beyond Achievement Awards will be presented at the 2007 CAS Annual Meeting in Chicago, Illinois. AR

Get Continuing Education Credits for Peer Reviewing!

Are you willing to serve as an "occasional" peer reviewer for *Variance*? Do you have experience or interests in particular areas of actuarial science? You probably do! Your real-world expertise developed from years of actuarial work makes you uniquely qualified to serve as a peer reviewer for an applied actuarial science journal like *Variance*.

The *Variance* Editorial Board is building a database that lists potential peer reviewers and their fields of expertise. This database will supplement our dedicated staff of Editorial Board peer reviewers who regularly review papers. Sometimes there is a need for peer reviewers with special expertise. At other times the flow of papers is so heavy that a few extra reviewers are needed.

What's in it for you? Here are some of the benefits:

- You can claim **Continuing Education Credits** for peer reviewing! This is especially valuable with the new requirements starting in 2008.
- You will expand your knowledge of actuarial science.
- You may be stimulated to write a paper.
- You will help the CAS promote education and research in property/casualty actuarial science.

Thanks to the many people who signed up using the 2007 CAS Participation Survey. If you did not sign up via the survey and are willing to add your name to the peer review database, please go to www.variancejournal.org, choose the pull-down menu "About *Variance*," choose "Expert Sign Up," and follow the instructions. AR

More on Credit Standing and Liabilities…

Reviewed by Philip E. Heckman

A Review of "Including Credit Standing in Measuring the Fair Value of Liabilities—Let's Pass This One to the Shareholders," Lanny G. Chasteen and Charles R. Ransom, *Accounting Horizons*, Vol. 21 No. 2, June 2007

The captioned article, which has appeared recently in an academic accounting journal and addresses very general accounting problems, should be of considerable interest to casualty actuaries and to the actuarial community at large. The authors, both accounting professors at Oklahoma State University, have proposed a solution to the credit standing dilemma that may potentially satisfy most parties with a stake in the issue.

Why should actuaries be concerned about this issue: whether liabilities should be discounted to reflect the obliged party's own credit standing? One answer is that actuaries value liabilities for a living. One needs a consistent and generally accepted theory of liabilities, if only for the sake of a good night's sleep. The authors rightly and aptly point out that no such theory exists. The practical accounting approach to the question is fraught with inconsistencies and presents an abiding challenge to intuition. They also mention that accounting scholarship on the problem is quite sparse.

FASB's research arm has spent considerable effort in support of the traditional approach wherein the liability holder reports as the initial value the cash proceeds realized from undertaking the liability, updating on succeeding reporting dates until the liability is settled. Under traditional GAAP, the valuation is updated using the discount rate (including credit discount) implicit in the initial transaction. Under the IASB/FASB fair value initiative, the valuation rate would change over time to reflect not only changes in general lending rates but also any changes in the liability holder's credit standing. Thus, under the proposed régime, failing companies would not die but only fade away. This latter feature is the cause of some controversy.

The authors have searched diligently in the accounting literature and found authors whose findings are both persuasive and at variance with those of FASB (and with centuries of accounting practice). Most notably, Lorensen, in his AICPA Accounting Research Monograph No. 4 (1992), after careful and exhaustive consideration of alternatives, rejects the notion that liabilities should simply mirror the countervailing assets and concludes that liabilities should be recorded at a discount equal to the current risk-free rate. The authors accept this finding without reservation—for reasons we shall try to make clear.

Why should liabilities be treated differently than assets? The IASB defines the value of a liability as the cost of transferring it to an independent and willing third party. But there is a fly in the ointment: a third party of what credit standing? FASB insists on a third party of standing comparable to the originator. (Before you scoff, remember that many smart people take this seriously.) In fact, liabilities are different. As our friend and colleague, Mike McCarter, is fond of saying, "Liabilities don't trade!" That is to say, the transfer of a liability to a third party is never absolute unless specified by contract or explicitly agreed to. Otherwise it is conditional on performance by the third party, and the originator is subject to recourse in the event that the third party fails to perform. The difference between the value of the third party guarantee and an absolute guarantee brings us inexorably back to the risk-free rate.

With this settled, the question remains of how to account for the difference between the risk-free value and the actual proceeds (call this the "borrowing penalty"), as well as for changes in the risk-free rate and in the credit standing of the obliged party. GAAP recognizes no such changes, amortizing on the basis of the initial proceeds. IASB/FASB fair value prescribes that any change in the risk-free rate or in credit standing results in a change in valuation, which is then taken into income and accounted for as gain or loss. (Improved credit = loss; debased credit = gain. I'm not making this up.) In the work I did on this problem (*NAAJ*, January 2004), I took the position that the liability should be valued risk-free and that the borrowing penalty is an expense to the enterprise, resulting in a loss at inception. Changes in the risk-free rate should lead to revaluation and pass through income. Since changes in credit standing do not affect the contractual obligation, they should affect neither valuation nor income. I owe the authors my thanks for their kind reception of this work.

The authors, while adopting risk-free valuation with changes passing through income, take a more sophisticated approach to the borrowing penalty. Noting that the penalty can be construed as a payment to compensate the lender for the owners' immunity from recourse in the event of default (the "default option" or "insolvency put"), they argue that the penalty should be accounted for as a direct charge against equity. (Note their subtitle.) This means it would have no impact on the enterprise's

Effect of Changes in Credit Standing and Risk-Free Rate						
Borrowing Rate			Risk-Free Rate		Principal Amount	
Yrs. 1-2		10%	Yrs. 1-4	6%	$20,000	
Yrs. 3-4		8%				
Yr. 5		5.93%	Yr. 5	4%		
IASB/FASB Fair Value			Proposed Liability/Equity Accounting			
	(a)	(b)	(c)	(d)	(e)	(f)
Year	Interest Expense (i × BOY Fair Value)	Fair Value (BOY FV + Interest)	Increase in Liability (i × BOY Liability)	Liability EOY (BOY Liability + Increase)	Equity Dr/(Cr) (Change in Put) BOY 1: (d) - (b) Yr. 1-5: (c) - (a)	Put Value (d) - (b)
0		$12,418		$14,945	$2,527	$2,527
1	$1,242	$13,660	$897	$15,842	($345)	$2,182
2	$1,366	$15,026	$951	$16,792	($416)	$1,766
Change in Credit Standing		$850				($850)
EOY 2		$15,876		$16,792		$916
3	$1,270	$17,146	$1,008	$17,800	($263)	$654
4	$1,372	$18,518	$1,068	$18,868	($304)	$350
Change in Fair Value / Loss		$363		$363		
EOY 4		$18,881		$19,231		$350
5	$1,119	$20,000	$769	$20,000	($350)	$0
	$6,369		$4,692		$850	

income statement. This deftly neutralizes one of the chief practical objections to risk-free valuation, but it also rests on a sound conceptual basis.

To see how it works, we shall reproduce the authors' Exhibit 6 here, which examines a loan of $20,000 payable after five years, during which the entity's credit standing improves at the end of the second year and the risk-free rate drops at the end of the fourth year. At inception, the obligation is recorded in column (d) as a liability discounted at the risk-free rate. The difference between this value and fair value discounted at the borrowing rate ($2,527) is debited from equity. At the end of the second year, the decrease in borrowing rate increases the fair value by $850 and decreases the put option's value (the prorated value of the shareholders' immunity) by the same amount. Neither change is recorded. At the end of the fourth year, the change in risk-free rate leads to a revaluation and a loss to income of $363. If the same loss is imputed to the fair value, the effective borrowing rate changes to about 5.93%. When the liability is retired at the end of the fifth year, the put option has gone to $0, and a net decrease in equity of $850 has been recorded to reflect the transfer of value to the lenders due to the improvement in credit standing.

The default option has been widely discussed in finance literature, but many of these discussions do not make clear that the option is an asset not of the corporate enterprise, which is not protected from recourse, but of the corporate owners, who do not own the enterprise outright but instead hold a call on the net assets (call = net assets plus put) after all other claimants have been satisfied. This question of ownership has been the source of much confusion, which our authors have happily dispelled. Their own claims for their approach are quite modest, as is only prudent since it involves substantial revisions to very ancient accounting practice. My own unburdened opinion as a layman is that they have found the right way of doing things.

Is this the last word? The only open question I can see at this point is whether risky obligations should be valued with a market risk premium. (Should liabilities with higher systematic risk be valued at a lower discount?) For obligations certain as to amount and timing, there is no question that risk-free valuation is appropriate. For contingent obligations, this is not so clear. Some have argued that a company undertaking a contingent liability can adjust its portfolio to diversify the systematic risk arising from it. In such a case, the costs would all be frictional, arising from the associated transactions. It is not clear, however, that such an approach is optimal or that it closes the argument. My own feeling is that the fledgling theory of liabilities is not far enough advanced at this point to settle the matter or to give quantitative guidance. I suggest also that actuaries have an urgent interest in helping to nudge it along.

Philip E. Heckman is president of Heckman Actuarial Consultants in Park Ridge, IL. He can be reached at peheck@aol.com.

Ratemaking Seminar Returns to Boston

By Klayton N. Southwood,
Chair, Committee on the Ratemaking Seminar By Kathy Olcese, FCAS, MAAA

The 2008 CAS Seminar on Ratemaking will be held on March 17-18, 2008 at the Royal Sonesta Hotel in Boston, marking the seminar's return to this city for the first time since 1997. The 2008 event will feature a keynote address by Massachusetts Insurance Commissioner Nonnie Burnes, who will talk about the planned return to Massachusetts of competitive rating and an assigned risk plan for personal auto insurance, coastal property insurance availability issues, and other items of regulatory interest. Tuesday's agenda will feature a general session with Insurance Information Institute President Robert Hartwig.

More than 40 concurrent breakout sessions are planned in the following tracks:

- General Ratemaking Concepts
- Underwriting
- Predictive Modeling
- Personal Lines
- Commercial Lines
- Workers Compensation
- Reinsurance
- Risk and Capital Management
- Data Management
- Regulatory

The seminar is open to CAS members and non-members. The General Ratemaking Concepts track will provide an educational opportunity for actuarial students, underwriters, and other non-actuaries interested in gaining a basic understanding of ratemaking concepts. The Underwriting track will provide useful material for actuaries and underwriters alike.

Set on the Cambridge side of the Charles River, the Royal Sonesta Hotel's ideal location puts you minutes from the best of Boston, with shopping, museums, and historic sites all nearby. Plan now to attend and experience St. Patrick's Day in Boston. Look for the brochure and registration information in the mail and at www.casact.org in the near future. AR

Photo's courtesy of Greater Boston Convention & Visitors Bureau.

CAS Plans Webinar Series

Receive continuing education credit…without leaving the office! The CAS is making this possible through a series of educational Webinars. Webinars provide an opportunity for structured learning on various subjects without the travel associated with traditional seminars. In fact, participating in a Webinar may count as an "organized activity" for continuing education credits.

CAS Fellows Mark Shapland and Louise Francis conducted the first CAS-sponsored Webinar on September 27. Shapland and Francis led an introductory, interactive presentation on "Reserve Variability" via a conference call complemented by an online presentation. Webinar attendees were encouraged to ask questions and came away with a foundational understanding of this cutting-edge topic and a glimpse of the future for loss reserve estimation techniques.

The Webinar Subcommittee of the Professional Education Policy Committee is interested in members' suggestions for future Webinar topics. Feel free to contact the subcommittee chair, Jim Rowland (jrow3@allstate.com), with your suggestions.

Be sure to look out for more of these opportunities in the near future. Announcements will be posted on the CAS Web Site and included in the weekly e-mail. AR

Boa Earns CAE

CAS Director of Communications and Marketing, J. Michael Boa, has obtained the Certified Association Executive (CAE) credential. The CAE is the highest professional credential in the association industry and is granted by the American Society of Association Executives. Less than five percent of all association professionals have earned the CAE.

To be designated as a Certified Association Executive, an applicant must have a minimum of three years' experience in nonprofit organization management, complete a minimum of 75 hours of specialized professional development, pass a stringent examination in association management, and pledge to uphold a code of ethics. Approximately 3,300 association professionals currently hold the CAE credential, which was first awarded in 1961. AR

25 Years Ago in *The Actuarial Review*

The Enduring Popularity of Puzzles

By Walter C. Wright

In his November 1982 editorial Matthew Rodermund lamented the fact that The Actuarial Review rarely got feedback from readers. According to him, "The only feature that always draws responses is the puzzle. That lets us know that at least the back page of AR is being looked at." The continual popularity of "It's a Puzzlement" is a credit to the two puzzle editors that The Actuarial Review has had: Wayne H. Fisher, who filled this role from 1977 through 1986, and John P. Robertson, who took over in 1987 and is still going strong!

Coincidentally, in the November 1982 AR Mr. Fisher identified 29 readers who had submitted solutions to the prior issue's puzzle, and singled out John Robertson's proof as possibly being the simplest of the 29 solutions, because John's elegant graphical proof did not require any accompanying words.

Here is the cute puzzle that Mr. Fisher chose for the November 1982 issue:

CRYPTARITHMS

This issue's puzzle is the cryptarithm show in Figure 5. Each dot in this multiplication problem stands for a digit from 1 to 9 inclusive. Each digit appears exactly twice, and the answer is unique. Computer-assisted solutions will be accepted.

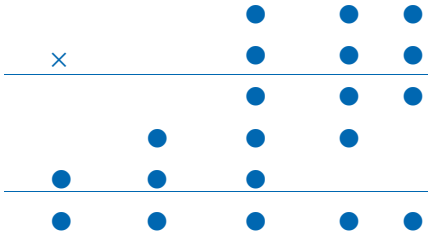


Figure 5

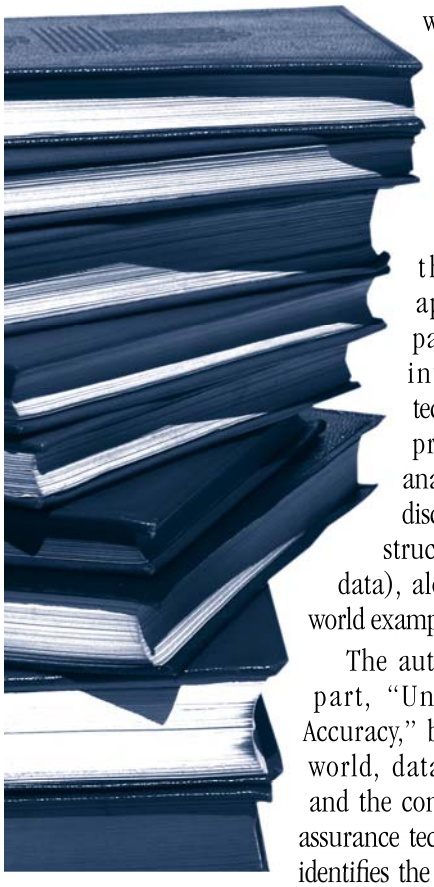
Precise Data is Key to Quality

Data Quality: The Accuracy Dimension by Jack E. Olson (Morgan Kaufmann, 2003, $48.95)

Reviewed By Lijuan Zhang, Member, CAS Data Management and Information Educational Materials Working Party

In *Data Quality: The Accuracy Dimension*, Jack Olson focuses on data accuracy, which he sees as the foundation for measuring the quality of data. The author has spent the last 36 years developing commercial software and is an expert in the field of data management systems. This background enables him to address data quality and accuracy from a practical viewpoint.

The first part of this three-part book defines inaccurate data and shows that many real-world problems arise from inaccurate data. The second part focuses on how a data quality assurance program is constructed using the "inside-out" approach. The last part introduces data-intensive analytical techniques such as data profiling (the use of analytical techniques to discover the true content, structure, and quality of data), along with some real-world examples.



The author begins the first part, "Understanding Data Accuracy," by introducing real-world, data quality problems and the concept of data quality assurance technology. The author identifies the essential elements of this technology: experts, educational materials, methodologies, and software tools. In order to define data accuracy in the larger picture of data quality, data is defined as "having quality if it satisfies the requirements of its intended use." Several examples illustrate key aspects of data quality:

- Accuracy: An 85% accurate database containing names, addresses, and phone numbers of physicians in a particular state would be considered poor quality for notifying physicians of a new law, whereas it would be considered high data quality for a new surgical device firm searching for potential customers.
- Timeliness: A dataset containing monthly sales information that is slow to become complete at the end of each month is poor when it is used to compute sales bonuses for that month. However, it is excellent when it is to be used for historical trend analysis.
- Relevance: A dataset without relevant information is of poor data quality for its intended use.
- Completeness: A database with 5% of information missing is probably a good quality database for general assessment but is considered to be low quality for evaluation.
- Understood: The dataset has to be understood for its intended purpose.
- Trusted: Only trusted datasets should be used.

The author introduces and describes data accuracy as "the most visible and dramatic dimension of data quality." Data accuracy, Olson writes, "refers to whether the data values stored for an object are the correct values."According to Olson, in order to be correct "a data value must be the right value and must be represented in a consistent and unambiguous form."

The second part of the book outlines the structure of a data quality program built for identifying inaccurate data and taking actions to improve its accuracy. "A data quality assurance program is an explicit combination of organization, methodologies, and activities that exists for the purpose of reaching and maintaining high levels of data quality." An inside-out methodology is believed to be the best way to address accuracy. This method works from a complete and correct set of rules that define data accuracy for a particular dataset. The author defines "inaccurate data evidence" as a collection of facts that are aggregated into issues. This evidence is produced by the data profiling process described below. The issues are then analyzed to determine the external impact.

The outside-in method looks for issues in the business, rather than looking at data. "It identifies facts that suggest that data quality problems are having an impact on the business." The facts are then examined to determine the degree of culpability attributable to defects in the data and if the data has inaccuracies that contribute to the problem.

Summarizing the two approaches to data quality programs (Olson, page 72, fig. 4.3):

Inside-Out Work Flow

Data →Issues →External impacts and data entry processes

Outside-In Work Flow

External evidence →Issues →Data and data entry processes

The data quality assurance program also requires an assurance team to decide how it will engage the corporation to bring about improvements and return value for their effort. The author advocates that team members should only be assigned to the team, i.e., this is their job—not a project.

Some of the key technologies used to create and maintain an effective data quality assurance program are:

- Metadata repositories: metadata should define what constitutes accurate data. It is essential for determining inaccuracies in data profiling.
- Data cleaning: identifying and cleaning up data after data problems have been discovered. It is valuable to clean up data before moving to the next step of data profiling to avoid distortions in the discovery processes of later steps.
- Data profiling: the use of analytical techniques to discover the true structure, content, and quality of a collection of data.
- Data filtering: eliminating incorrect, invalid or unknown data.
- Data monitoring: looking at individual transactions before they cause database changes or looking at the entire database periodically to find issues.

Data profiling, a fairly recent technology that has come about in the last few years, uses any known metadata and the data itself to discover the presence of inaccuracies within a database. The general model of a data profiling process can be shown as follows in figure 1 (Olson, page 123, fig. 7.1).

Data profiling uses a bottom-up approach. It starts at the most basic level of the data and then goes to progressively higher levels of structure. Figure 2 (Olson, page 131, fig. 7.2) illustrates how the major steps of data profiling (in the middle column) can address data issues (in the right-hand column).

Within each data profiling step there can be processes for discovery, assertion testing, or value inspection. The outputs of these processes are used to make decisions. The author discusses each step in a separate chapter with real-world examples of the rules and the types of investigative thought required to be effective. The author believes data profiling is probably the single most effective technology for improving the accuracy of data in corporate databases.

Figure 1
General Model—Data Profiling
(Source: Olson, page 123, fig. 7.1)

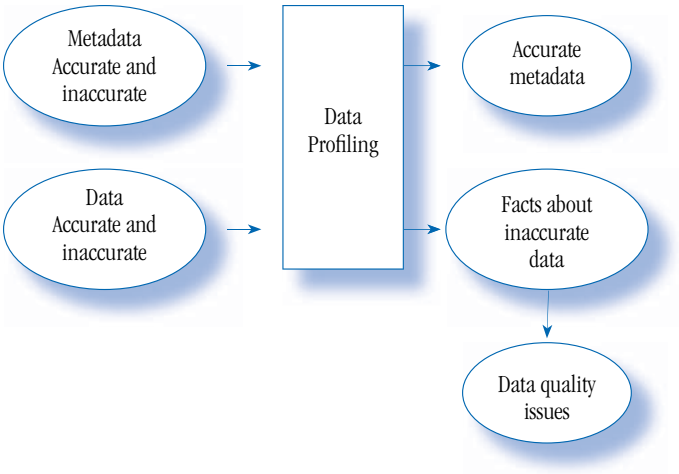
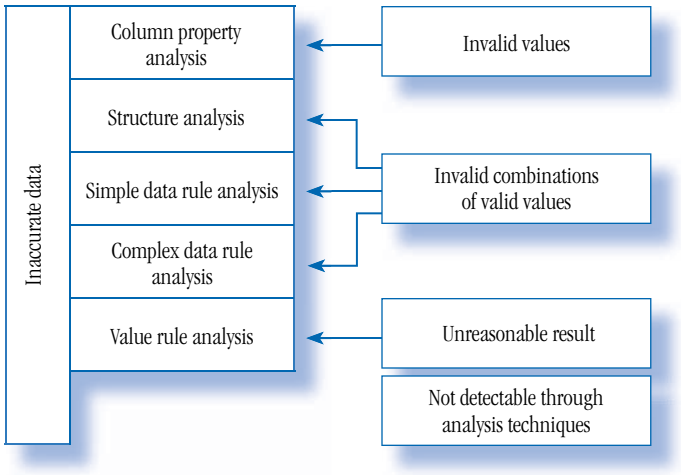


Figure 2
Major Steps of Data Proofing
(Source: Olson, page 31, fig. 7.2)



Overall, the book provides a thorough introduction to data accuracy and the data profiling technology that could significantly improve data quality. A reader could probably develop a data quality assurance program including data profiling after reading the text, although there is not much on statistical methodologies to detect data problems. However, it does serve as a good reference for data quality structures and concepts.

Recent Developments in the Treatment of Property and Casualty Insurance Contracts Under Fair Value Accounting

By Gareth Kennedy, ACAS, MAAA, and Mellody Mondini

Editor's Note: The following article has been edited to fit. The full article can be viewed in its entirety in the online edition *The Actuarial Review* in the CAS Web Site, www.casact.org

"The times they are a-changing," sang Bob Dylan, and they sure are in the financial reporting world for insurance liabilities. For over 10 years, the International Accounting Standards Board (IASB) has been working to develop an international accounting standard for the valuation of insurance contract obligations. In May 2007, a milestone was reached with the publication of a discussion paper, "Preliminary Views on Insurance Contracts." The paper outlines the principles expected to comprise the draft IASB accounting standard for insurance contracts.

There has been a push towards increased cooperation between the IASB and the Financial Accounting Standards Board (FASB). This has culminated with a Memorandum of Understanding between the boards, committing them to a convergence of U.S. Generally Accepted Accounting Principles (U.S. GAAP) and International Financial Reporting Standards (IFRS) fair value accounting standards.

These changes have actuaries and other insurance industry stakeholders waiting feverishly as they anticipate the new principles-based accounting standards. In order to thoroughly appreciate the recent events, an understanding of fair value accounting is needed.

Fair Value Accounting

The objective of fair value accounting is to improve the decision-making process for investors by making the valuation of assets and liabilities of companies throughout the world more comparable to one another. For obligations arising from insurance contracts, the IASB has previously published that it believes investors are interested in the present value of the "best estimate" of all future liabilities with an added amount to compensate for the risk of purchasing the liability. Investors may make more informed decisions using this economic value approach as opposed to simply knowing the liability's nominal value.

Currently in U.S. GAAP insurance accounting, revenues, expenses, and profit are reported in a "defer and match" manner. Fair value accounting would require premiums to be recognized as revenue immediately. This would eliminate the unearned premium reserve and deferred policy acquisition cost asset and shift from an earned to a written premium recognition basis. Simultaneously, liabilities for all claims (whether incurred or yet-to-be incurred) on policies in force would be recognized. Thus, if the premiums less the expenses were greater than the liabilities, the insurance company would report an immediate profit and vice versa. Similarly for reinsurance premiums and recoveries, premiums paid to reinsurers would be expensed when the reinsurance policy is issued; rather than record anticipated reinsurance recoveries as a "best estimate" asset, the balance sheet would be offset by a policy benefit asset when recoveries are made.

IASB Discussion Paper

The IASB has stated that it wishes to move away from the term "fair value," which is now familiar to most actuaries. Instead the IASB has decided to use the term "current exit value" (CEV). Currently, the IASB has stated that it is "not yet in position to determine whether these two notions are the same."

In order to measure the CEV of an insurance contract, the IASB has proposed that three building blocks will be needed:

- an unbiased, probability-weighted estimate of the current expectation of future cash flows;
- a reduction in the estimate of future cash flows for the time value of money;
- a margin to increase the discounted cash flows for the bearing of the risks associated with the obligations of the contract.

The first building block will be an estimate of the future cash flows for all insurance contract obligations, including expected future losses, loss adjustment expenses, premiums, and policy maintenance costs. Generally, traditional actuarial methods can

be used to estimate these cash flows. Since obligations will be recognized when the policy is written, projections of premiums and losses by underwriting year, rather than by accident year, may simplify the evaluation process.

The second building block will be the reduction in the expected future cash flows for the time value of money. The key assumption in this step is the selection of a discount rate. The discussion paper indicates that the selected discount rate should match observable market prices for cash flows with similar characteristics. Many are interpreting this to mean that a risk-free rate should be used after an adjustment for the liquidity of the contract obligations and the credit risk of the insurance company.

The final building block is the addition of a risk margin. According to the IASB, the risk margin is "an explicit and unbiased estimate of the margin that market participants require for bearing risk." So how is the risk margin estimated? The IASB stated that it will only give general guidance on methods that should be used and will not publish prescribed methodologies.

Risk Margins

The IASB allows for some recognition of the correlation between risks with the use of the term "unit of account." The unit of account determines the level of aggregation allowed for the purpose of evaluating the contract obligations. According to the white paper, "Risk margins should be determined for a portfolio of insurance contracts that are subject to broadly the same risks and are managed together as a single portfolio." However, the white paper further states, "Risk margins should not reflect the benefits of diversification between portfolios or negative correlation between portfolios."

The International Actuarial Association has issued a white paper on risk margins that provides two categories of methods that would be appropriate based on IASB guidance: quantile methods and the cost of capital methods. Both categories have difficulties in providing a market-based estimate of a risk margin.

Quantile methods express the risk margin in terms of a confidence level, which can be directly calculated from the distribution of reserve estimates or indirectly calculated through the application of a percentage load or via another method like conditional tail expectation. The key difficulty with this approach is the selection of the appropriate market confidence level for the risk.

Risk margins based on the cost of capital methods are determined by the cost of holding capital to support the contract obligations. Again, several difficulties exist with this approach. First, it is complicated to allocate the required capital to the portfolio of contracts under review. Second, it is difficult to calculate the market capital (as opposed to regulatory capital) that would be required to support the obligation at future evaluation dates. Finally, the market rate for the cost of capital that should be used to calculate the risk margin may be difficult to estimate.

The Future

The FASB considers the IASB's project on accounting for insurance contracts a modified joint project. Both boards are seeking comments on the preliminary views expressed in the May 2007 discussion paper by November 16, 2007. The IASB plans on issuing a draft exposure of a full accounting standard on insurance contracts in the fall of 2008 with the final standard to follow in 2009.

Recently, the SEC announced that non-U.S. companies registered in the U.S. that report according to IFRS will no longer need to reconcile through U.S. GAAP. This and the other events discussed indicate that a single source of guidance for all accounting, which may very well be fair value-like in nature, is not too far away. Therefore, actuaries and other insurance stakeholders need to be prepared for these exciting changes.

Gareth Kennedy, ACAS, MAAA, is a member of the CAS Candidate Liaison Committee and Mellody Mondini is a candidate representative on the committee.

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Conger, Robert F., James D. Hurley, and Stephen P. Lowe, "How Might the Presentation of Liabilities at Fair Value Have Affected the Reported Results of U.S. Property and Casualty Insurers?" Fair Value of P&C Liabilities: Practical Implications, Arlington, Va.: Casualty Actuarial Society, 2004.

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Business Benefits of Capital Allocation

By Jonathan Bilbul, U.K. Correspondent

The business benefits of capital allocation have become a reality for many European insurers as a result of implementation of financial risk models. Although initially driven by regulatory advances such as Individual Capital Adequacy Standards (ICAS) in the U.K. and Solvency II across Europe to monitor a firm's overall capital adequacy, insurers who embed these capital models into daily business practices stand to gain significant advantages. Insurers who use capital allocation for enterprise risk management, pricing, and performance management are able to achieve greater stability and performance of results for their stakeholders.

The need for capital allocation in insurance is peculiar as the capital of the entire company stands behind each risk. In other industries, such as manufacturing, capital allocated is the capital used by a particular business area. In contrast, in insurance the capital allocated to a class of business can easily be used by another depending on the class' actual losses. When capital is needed it will be very different from what is allocated. The value of capital allocation, however, is in the understanding it brings of the underlying business. The capital allocation technique used depends on the desired objectives, as each will highlight different strengths and weaknesses of the component pieces.

From a risk management perspective, the objective is to determine the drivers of adverse scenarios and the insurance company components that contribute adversely to the overall risk profile. Firstly, risk may be broken down by insurance risk type, whether asset risk, underwriting risk, reserve risk, operational risk, or strategic risk. Capital allocation in the risk management case can be used as a measure of each component's degree of risk and thus help management decide where to focus their efforts to improve results. For example, a capital allocation exercise might reveal that an investment strategy is imprudent, so a more conservative approach might be tested in the financial risk model. Alternatively, capital may be broken down by peril, line of business, contract, or layer. Here it may be discovered that catastrophes or large losses contribute significantly to the overall risk profile. The impact of a variety of reinsurance treaties can be measured to see which are the most effective in saving capital. Focusing on the individual components with the greatest amount of capital allocated can reveal the areas where risk mitigation will achieve the greatest gains.

From a performance management perspective, the central issue is how the mix of business should be optimized to achieve maximum return on total capital. Allocation for performance management can reveal classes of business for potential growth and classes which should be cut back. In a book of business with an optimal mix by class, the return on allocated capital will be equal for all classes if an appropriate allocation method is used. In this case, understanding the relationships between different risks is key. Certain classes of business might not generate enough profits when held on their own. However, when classes are held in a portfolio in the right proportions, risks can be offset due to diversification benefits, and each class may achieve the target return on equity. In this way, capital allocation can be used for business planning and for setting growth objectives for all classes of business in the portfolio.

From a pricing perspective, allocation of capital is used to determine the cost of underwriting a risk. Although the risk's price is set in a competitive environment, the decision whether to accept or reject a risk at the market price is reached by examining the internal cost. In this case, capital allocation methods that yield negative allocations are not useful; it is far from obvious what a negative return on capital means in a pricing context. Here, an issue central to the choice of allocation method is the extent to which diversification benefit is credited to a risk. Should new risks only bear the marginal contribution they make to capital given the pre-existing portfolio, or should they also bear some of the stand-alone capital cost? Using capital allocation for pricing has the added difficulty that a change in one class of business can affect capital required for another. For this reason, allocation methods that yield more stability might be chosen.

Huge advancements have been made in implementing capital allocation methods due to the Monte-Carlo simulation techniques employed in building capital models. Over the last two decades, many articles on capital allocation have been

written in the domains of finance and insurance; however, simulation modeling has opened the door to using methods that were once highly theoretical in practice. Nonetheless, much work remains for the creative spirit to test new methods and explore the advantages and disadvantages of each. One thing is certainly clear: Those insurers who embed their capital models in their daily business practices can gain significant business benefits.

Jonathan Bilbul, FCIA, FCAS, is a consultant at EMB Consultancy in England. He can be contacted at jonathan.bilbul@emb.co.uk. *The author wishes to thank Andrzej Czernuszewicz, FIA, Ph.D., Partner at EMB Consultancy, for his help in preparing this article.* AR

Two CAS Members Named "Women to Watch"

In the July 30, 2007 issue of *Business Insurance*, 50 women who work in insurance were selected and deemed "Women to Watch." Two CAS members, Raji Bhagavatula, FCAS 1985, and H. Elizabeth Mitchell, FCAS 1990, were included on this prestigious list of professionals.

Raji Bhagavatula, a principal at Milliman, has been involved with many committees in the CAS and the American Academy of Actuaries. Concerning her route to her current position, she says, "After a few years following the traditional actuarial career progression in a company, I wanted to expand my horizons." She adds that her actuarial base has helped her in other aspects of her job as a consultant. "The problem-solving skills one develops to pass exams can be applied to most situations, actuarial and otherwise. I have been able to apply these skills to address challenges faced by my clients, which many times do not fall under the title of traditional actuarial work."

As part of the article, *Business Insurance* asked each woman what their advice to young women would be. Ms. Bhagavatula's advice is applicable to all young actuaries, "Pay attention to the faster-growing nontraditional areas within your field and develop expertise in those areas. The insurance sector is experiencing rapid growth outside the U.S., so think globally."

H. Elizabeth Mitchell, who was also recently named the Association of Professional Insurance Women (APIW) Woman of the Year, says she sees her base as an actuary as a great building block for her current position as president of Platinum Underwriters Insurance. "I think the training an actuary gets both on the job and through exams [supplies] a broad and deep understanding of the insurance industry." This background, she says, lends itself to other disciplines and leadership roles within the industry, "I use my actuarial skills everyday."

When speaking with *Business Insurance* Ms. Mitchell mentioned fellow CAS member, Albert Beer, when describing some of the best professional advice she's received, "Al Beer from Tillinghast told me that I shouldn't consider each career decision as being a life or death decision because other opportunities would come along. I think it's important to solicit as much advice as you can, but I think you have to make your own decisions. . . If something feels right, or you enjoy it, or you think it's a broadening experience, whatever, you should give it a shot. You should judge what the risks are of each."

Both reader nominations and *Business Insurance* staff input were used in creating the list. *Business Insurance* also noted that a "Women to Watch" section will become an annual feature of the publication. AR

FCAS Gains FIA Via Mutual Recognition

In September 2007, Christopher M. Smerald attained Fellowship of the Institute of Actuaries through mutual recognition. Smerald is the regional senior vice president for AIG in London, England. He became a CAS Fellow in 1992. AR

Errata Sticker Instructions Contain an Error

Dues notices issued to CAS members in mid-October contained three errata stickers to place in the 2007 *Yearbook*/2006 *Proceedings*.

The stickers correct three photo captions for new CAS Fellows and Associates who received their designations in 2006.

The instructions for the third sticker are incorrect. The third sticker should be placed on page 239, not page 238. The second sticker is for page 238.

The CAS regrets the error.

The Cost of an Education

Plan for Meeting and Seminar Registration Fee Increases in 2008

By Andrew E. Kudera, CAS Vice President-Professional Education

Picture this: On the way to a morning meeting, you stop to grab a cup of coffee, a bagel, and fruit cup from the local café. The cashier tells you that you owe $37.66. That sounds outrageous, but that is how much your breakfast will cost at the 2007 Annual Meeting in Chicago, based on the costs charged by the hotel.

Most CAS members are surprised to learn about the steep prices charged by hotels that host CAS meetings and seminars. The CAS FY 2008 budget was just accepted by the Board of Directors, and with the larger-than-usual increases approved for meeting and seminar registration fees, it seems appropriate to provide some detail on the economics of providing professional education and the steps the CAS is taking to ensure that education is affordable for the membership.

	2003 Avg. Per Attendee Cost	2007 Annual Meeting Cost	# of Events Per Meeting	Total 2003 Avg. Per Attendee Cost	Total 2007 Annual Meeting Cost
Breakfast	$25	$38	3	$75	$114
Lunch	$40	$56	1	$40	$56
Reception	$60	$60	2	$120	$120
Dinner	$105	$150	1	$105	$150
Breaks	$10	$24	4	$40	$96
Total				$380	$536

Why are registration fees increasing substantially?

- **Prices charged by hotels have increased significantly and CAS registration fees have not kept pace.**

  The major cost component of CAS meetings and seminars is food and beverage charges. About four years ago, Chris Carlson, then VP-Professional Education, wrote an article for this space that included a table illustrating the typical food and beverage costs at the CAS Spring and Annual Meeting. A comparison of the charges then versus now shows how much hotel charges have increased in just four years.

  The registration fee for the 2003 Annual Meeting was $700; the fee in 2007 is $950, up from $800 in 2006. So while the food and beverage costs have increased more than 40% in four years, the meeting registration fee has increased 36%. And along with food and beverage costs, other costs to hold a meeting, such as audio-visual equipment rentals, have increased as well.

- **The CAS is striving to provide a more fulfilling meeting experience for attendees.**

  The expectations of members attending CAS meetings and seminars have increased, and the CAS has taken steps to fulfill those expectations. For example, members expect to have the capability to keep up with what's happening back in the office while attending a CAS meeting, and the CAS recently began to provide Internet kiosks so that members can check their e-mail on site. While Blackberry-type devices seem ubiquitous because everyone who has one always seems to have it out with thumbs a flyin', the majority are not afforded that convenience, so the Web connections have been a popular addition to the meeting landscape.

  Related to increased expectations is the reality of dealing with increasing attendance figures. The large classes of new Fellows and Associates who are recognized during the Business Session of the Annual Meeting has ballooned the attendance, necessitating larger rooms, increased seating, and therefore, the use of enhanced (and more expensive) audio-visual equipment.

- **The CAS has engaged the services of professionals to enhance learning opportunities for the membership.**

  Increased costs are not solely a function of the hotel expenses or limited to the larger meetings and seminars. Registration fees have also increased for our Limited Attendance Seminars, primarily because the CAS is looking at a different model for these learning opportunities, which involves

hiring consultants to teach the material. While the meetings and seminars rely on volunteers willing to serve as panelists for sessions, the intensive nature of the limited attendance seminars, with their hands-on, individualized instruction, requires recognition of the time that educators put into preparing to teach these seminars. The Reserve Variability Seminar and DFA Modeling Workshop are two successful examples of this new approach, and others will follow.

What is CAS doing to keep professional education affordable?

Despite the increases, registration fees for CAS meetings and seminars continue to be among the lowest in the industry. The SOA member fee for its 2007 Annual Meeting is $985, Conference of Consulting Actuaries fees is $1,150, and the CIA registration fee is $975 (Canadian).

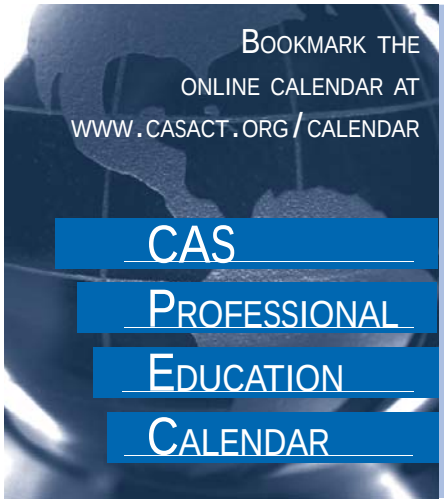
That said, we are looking at ways to keep registration fees affordable so that attendance does not decline. The Spring and Annual Meetings are priced to break-even on a combined basis, but the seminars provide an important source of revenue that helps fund other aspects of the organization. Primarily, seminar revenue funds research activities, with an allocation in FY 2008 of $75,000 to the research fund for call paper awards, funded research projects, grants to researchers, and travel expenses to have CAS members present the results of research to our international counterparts.

The CAS is pursuing several initiatives to keep registration fees affordable:

- **Using alternative vehicles to deliver continuing education.** Wouldn't it be great if we could eliminate the costs associated with in-person meetings—the travel costs that attendees incur and the food, beverage, and AV costs that CAS pays the hotels? Well, we can, with the advent of CAS Webinars! The inaugural CAS-sponsored educational Webinar was held on September 27 on the topic of reserve variability. This 90-minute session was offered for $125, with attendees participating through an Internet connection and a telephone. Note that multiple people in the same office could participate over the same connection at the cost of just one registration. Look for additional Webinars to be offered in 2008 and beyond.
- **Sponsorships of CAS Meetings.** CAS meeting and seminar attendees who do not attend other organizations' programs might be surprised to learn that corporate sponsorships are prevalent in the meeting industry. It is essential that we find alternative ways to increase revenue from our events, aside from escalating attendee fees. The recent CAS-hosted 2007 ASTIN Colloquium and the ERM Symposium are two events that already rely heavily on corporate sponsors to help the bottom-line, and we will be looking for ways to expand the partnerships with sponsors at future CAS events.
- **Restructuring the Meetings.** A task force has been formed to consider our strategy with respect to offering meetings. Are two meetings—one in the spring and one in the fall—still needed? Do the meetings need to span two-and-a-half days, or could we deliver the same value in less time (and for less cost)? These questions and others will be addressed in a report of the task force expected during 2008.

In summary, economic challenges facing our professional education programs will make the cost of an education higher in 2008. However, we are proactively addressing the challenges. Nontraditional methods of learning, such as Webinars and Online Courses, will be offered more frequently. In addition, new twists on our traditional offerings should eliminate future increases beyond those dictated by inflation, and we will continue striving to enhance the meeting experience for those attendees participating in-person.

The 2008 calendar of events will offer something for every CAS member—check the calendar on the CAS Web Site and make plans to attend a program today! AR



January 04,-22, 2008
CAS Online Course:
Enterprise Risk Management
CAS Web Site

March 17-18, 2008
Ratemaking Seminar
Royal Sonesta Hotel
Boston (Cambridge), Massachusetts, U.S.A.

April 14-16, 2008
ERM Symposium
Chicago Marriott Downtown - Magnificent Mile
Chicago,Illinois, U.S.A.

May 19-20, 2008
Seminar on Reinsurance
Boston, Massachusetts, U.S.A.

June 15-18, 2008
CAS Spring Meeting
Le Chateau Frontenac
Québec City, Québec, Canada

XXXVIIIth ASTIN Colloquium
July 13-16, 2008
Manchester Town Hall
Manchester, England, U.K.
www.actuaries.org/ASTIN2008/

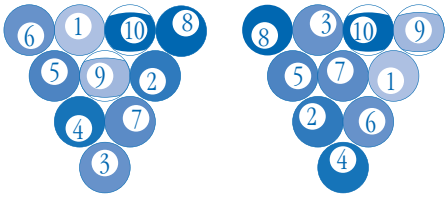
September 18-19, 2008
Casualty Loss Reserve Seminar
Omni Shoreham
Washington,DC, U.S.A.

JOHN P. ROBERTSON

Lots of Differences of Pool Balls

A difference triangle is a set of rows of integers where the values in a given row are the absolute values of the differences of adjacent numbers in the row above. If the first row has n integers, the difference triangle will have n rows, and the last row will have one entry. Here are the two essentially different difference triangles that use the integers 1, 2, and 3:

There are difference triangles that use the integers 1 to 6. Here are a couple of difference triangles using the integers 1 to 10.



The puzzle is to find a difference triangle using pool balls, so there are five rows and each of the integers 1 to 15 is used exactly once. For extra credit, show how a solution could be found without using a computer. Here are a couple of hints. First, 15 has to be in the top row. Second, there are only a few patterns of odd and even numbers that will work.

Can Bob Find Alice?

The puzzle was that Alice was standing still inside a circle with a radius of 2. Bob started at the center of the circle, and could see a distance of 1. He could move in steps of 1 and, if he couldn't see her, was told whether he had gotten closer or not. The question was, could Bob find Alice in at most 5 steps?

Alex Bodewing's solution is more or less as follows. Bob can find Alice in 5 steps. Let Ct be the circle of radius 1 visible to Bob at time t, and let At be Bob's position at time t. If at any time, including time 0, Bob sees Alice, we're done. We will only discuss what Bob does at each step if he doesn't see Alice. In particular, if Bob does not see Alice at time 0, then Alice is somewhere in the annulus bounded by circles of radii 1 and 2 centered at Bob's initial position, which we take to be the origin. Bob moves north (up, along the y-axis) one step. If he's closer, then Alice is north of the line $y = ½$, and Bob's second step is to $(\sqrt{3}/2, 3/2)$. If he's closer again, he moves to the southeast one step, say to the southern intersection of the line $x = 1.4$ and C2. If at time 2, Bob had moved further away, he goes back to A1 and then to $(-\sqrt{3}/2, 3/2)$, then southwest.

Now suppose Bob had moved further away on his first step, so Alice is on or below the line $y = ½$. For his second step, Bob moves to A2 = $(\sqrt{3}/2, ½)$. If Bob is closer, then Alice is to the right of the line $y = -\sqrt{3}x$. Then it's not hard to find three steps that cover the lower right portion of the annulus below $y = ½$ around to $y = -\sqrt{3}x$. If Bob's second step had put him further from Alice, then he should plot a course that would have his fifth step land him at A5 = $(-3/2, -\sqrt{3}/2)$. Note that this point is less than a distance of 1 from any point in the intersection of the line $y = \sqrt{3}x$ and the annulus below the x-axis. The fourth step should land him at the point that is about (-1.080796, 0.041867) and is the intersection of C5 and the circle of radius 2 centered at A2. The third step will be half way from the second step to the fourth. Circles C4 and C5 cover the lower left section of the annulus below $y = ½$ and to the left of $y = \sqrt{3}x$.

David Uhland submitted a similar solution. David suggests that it would be interesting to determine the radius of the largest circle in which Bob can find Alice in five steps. My own sense is that this radius is only slightly larger than 2.

Can the Prisoners Win Their Release?

Jim Rust and Jeff Subeck also submitted solutions to the May 2007 "It's A Puzzlement" column.

In or Out of the Comfort Zone?

Editor's Note: This article is part of a series written by members of the CAS Committee on Professionalism Education (COPE). Its intent is to stimulate discussion among CAS members. Therefore positions are sometimes stated in such a way to provoke reactions and thoughtful responses on the part of the reader. They are not necessarily intended to be complete, best-practices solutions. Responses are welcomed. The opinions expressed by readers and authors are for discussion purposes only and should not be used to prejudge the disposition of any actual case or modify published professional standards as they may apply in real-life situations.

You are an FCAS and MAAA and a well-established actuarial consultant for a single office actuarial firm with a total of four credentialed actuaries and eight actuarial students. Your firm's largest single client for the past four years has been the insurance department of the State of Never-Too-High. Your relationship with the insurance department and, in particular, the commissioner is very strong. The relationship is also very profitable for the firm. The firm's services to the insurance department include reviewing actuarial statements of opinion, reviewing rate filings, and performing regulatory insurance company exams. The loss of this client would significantly affect your career and the future of the firm.

The State of Never-Too-High borders the State of Confusion, which is having a very difficult time regulating insurance companies. Last year two property/casualty insurance companies domiciled in the State of Confusion failed. The failures are projected to cost the State of Confusion $50M. The failures have received significant press coverage in the region. A review of the two failures has identified some similarities. These include:

- Both failed companies operated in only a handful of states in the region,
- Both had over 50% of their net reserves in workers compensation exposures, and
- Both had commenced operations in the past 10 years.

You recently had a meeting with the insurance commissioner in the State of Never-Too-High. The focus of the meeting was the insurance failures in the State of Confusion. The commissioner expressed deep concern over the failures and indicated that there has been a decision to accelerate the regulatory exam schedule for several of the state's domiciled workers compensation writers who fit into the failure profile from the State of Confusion. The commissioner indicated that he wanted your firm to perform the exams and he also explicitly articulated the expectation that your firm would take an ultra-conservative position in estimating loss reserves. He stated that he expected the reserve point estimates from your firm to be at least 20% higher than the expected value reserves for each company. He even went as far as to say that reserve analyses have hundreds, and, in some cases, thousands, of assumptions and selections. He indicated that by being a little conservative on a material portion of them his expectation could be easily achieved.

Are you comfortable making a series of conservative selections so that your point estimate is 20% greater than the expected value reserves?

Yes

You are professionally comfortable with performing the exams as discussed for primarily two reasons. First, your client's primary role is to protect the policyholders, workers, and tax payers in the State of Never-Too-High. The insurance department's mission is to "protect consumers by efficiently regulating the insurance industry's market behavior and financial solvency." In your role, you are effectively an extension of the insurance department and are thus also responsible to provide this protection. In addition, the recent failures in the State of Confusion provide direct evidence that conservative selections would be prudent. Second, Actuarial Standard of Practice 19 on Actuarial Appraisals indicates that assumptions used in the appraisal of a company need to be consistent with the circumstances of, and relevant to, the user of the report who will make decisions based on the report. Clearly, the approach as discussed is relevant and appropriate for the Insurance Department's purpose.

No

The Code of Professional Conduct, Precept 1 indicates: "An actuary shall act honestly, with integrity and competence, and in a manner to fulfill the profession's responsibility to the public and to uphold the reputation of the actuarial profession." You believe that targeting an outcome prior to starting an analysis is in conflict with acting honestly and with integrity. Also, Standard of Practice Number 43, Property and Casualty Unpaid Claim Estimates states: "The actuary should use assumptions that, in the actuary's professional judgment, have no known significant bias to underestimation or overestimation of the identified intended measure and are not internally inconsistent." In this case, you believe that the request would require a significant bias to overestimate the results. AR

The CAS ERM Vision

By John J. Kollar, Vice President-ERM

Uncertainty is common to all actuarial functions. Ideally, these functions are well coordinated so that risk is treated consistently and in an integrated fashion across your company. That is the objective of Enterprise Risk Management (ERM). The integrated, holistic treatment of risk in the ERM process can help you and your company reduce expenses, increase profits, and increase the company's value. As an actuary, you will find that ERM is an excellent process by which to understand and be a part of the "big picture" of your company.

The CAS has recognized this, as reflected in the second half of the CAS Centennial Goal, "CAS members will advance their expertise in pricing, reserving, and capital modeling, and leverage their skills in risk analysis to become recognized as experts in the evaluation of enterprise risks, particularly for the property and casualty insurance industry." What we are trying to say is that we are not abandoning our traditional roles of ratemaking and reserving—rather we are building on them—and that is an important distinction.

Recently, the CAS Board of Directors endorsed a more comprehensive and specific ERM Vision expressing the goal that CAS members will provide ERM services and have the skills and techniques to serve as chief risk officers and in other ERM roles.

So what is the CAS doing to help achieve this vision and the Centennial Goal? First, the board agreed that the CAS should participate in an initiative to develop a global ERM designation. However, to allow CAS more flexibility, the board stopped short of committing the CAS to support the final outcome. So far, eight actuarial organizations have expressed an interest in the designation, with another 12 organizations indicating they want to be supportive observers.

The board also approved release of the report titled, "Making the CAS an Exemplary Non-Profit ERM Organization by Developing Best Practices and an ERM Program." This report was prepared by the CAS ERM Best Practices Implementation Task Force, chaired by Lee Smith, whose task was to develop and implement an ERM program for the CAS that reflects best practices.

The work of that task force generated the formation of the ERM for CAS Committee. This committee, chaired by Steve Johnston, is working to develop a risk management culture within the CAS and across all CAS functions. As an organization of professionals who deal with financial and other consequences of uncertain future events (risks and opportunities), the CAS should have an exemplary ERM program. This committee is working hard to get us there.

Risk management is a long-standing and evolving corporate function, and no one person or organization can know everything. So it makes sense for the CAS to cooperate with other professionals. Two groups we're working with closely are the Risk Management Section and the ERM Institute International, or ERM-II for short.

A few years ago the board approved joint sponsorship of a Risk Management Section with the SOA, and now the CIA has become involved as well. The mission of the Risk Management Section is to advance the actuarial profession by assisting members of the Section with the educational, research, networking, and other specialized needs that arise in the risk management area of actuarial practice. The Section is similar to the existing CAS Special Interest Sections and it provides a vehicle for CAS members to learn about and contribute to risk management issues. CAS members are encouraged to join the Risk Management Section and take advantage of the opportunities it offers (to sign up, see www.casact.org/sections/rms/).

ERM-II is a nonprofit educational and research organization, initiated by an international group of universities and professional organizations. It focuses on education, research, and training within an ERM conceptual framework. The CAS is a founding member and has played a leading role in the formation and development of ERM-II. ERM-II is very active and welcomes the CAS membership involvement. Among many other activities, they recently held a research seminar in France, published the research project "Enterprise Risk Management for Property-Casualty Companies," and jointly hosted the Columbia University research conference last year. Additionally, several ERM-II Board members will be participating in panels at the IAA meeting in New Zealand, and CAS Fellow Wayne Fisher serves as the executive director.

There are many ERM-related developments in the marketplace that suggest that ERM or greater focus on risk management is inevitable. For example:

- Rating agencies are considering insurer and reinsurer ERM programs in their financial strength rating process.
- The International Association of Insurance Supervisors

(IAIS) is pursuing Solvency II for implementation in 2010 or 2011.

- In Canada, the Office of the Superintendent of Financial Institutions (OSFI) is planning to change to Solvency II-type criteria once it becomes operational in the European Union.
- Currently insurance companies in Mexico are required by law to have an independent ERM opinion that is presented to the regulator, the National Commission of Insurance and Surety (CNSF).

These are just some of the recent developments that remind us how small the world is today and how it continues to shrink. International developments wash up on North American shores at e-mail speed. Obviously the CAS has to participate in relevant important issues, or we risk being stuck with whatever others decide.

While it will take years before many of the benefits of ERM are realized, the CAS should vigorously pursue ERM or improved risk management techniques so that our employers, our profession and our members are not at a competitive disadvantage in the marketplace. I encourage you to take advantage of the ERM sessions at CAS meetings, the annual ERM Symposium, and CAS-sponsored ERM online courses. As it says in the CAS's ERM Vision document, "ERM still remains a vision with substantive problems yet to be solved. But these problems create opportunity for those who can solve them." AR

2008 Symposium Offers the Latest on ERM Thinking and Practices

6th Annual Premier Global Event on ERM Returns to Chicago, April 14-16, 2008

Nearly 600 senior executives, directors, and risk management experts gathered at the 2007 Enterprise Risk Management (ERM) Symposium in Chicago to present the newest information on ERM thinking and practices. The 2008 ERM Symposium, sponsored by the CAS, the SOA, and the Professional Risk Manager's International Association (PRMIA), returns to Chicago on April 14-16, 2008.

The Symposium will provide an ideal learning opportunity for those interested in emerging risk management techniques and trends, both within the insurance industry and beyond. Presentations will range from discussions of financial and operational risks, creating value through ERM, interaction between risks, and capital modeling issues. Original research, generated by a call for papers program, will also be presented.

Sessions will feature the top risk management experts offering their perspectives on key risk issues and the latest ERM topics. Additionally, several pre-program workshops will be offered to demonstrate hands-on applications that are essential for ERM practitioners.

The Symposium also offers ample opportunity for attendees to renew and expand their network of colleagues. An exhibit hall provides companies the chance to showcase their ERM knowledge and services to key decision makers from insurance and other industries. Sponsorship opportunities are also available. AR

CAS 2007 Volunteer Honor Roll

We are an association of people, professionals, and friends.

Since the founding of the CAS in 1914 volunteers have been the main life force sustaining the society through its various dimensions of growth—in the examination process and in the variety of continuing education activities as well as in supporting the sheer growth in membership. As a result members of the CAS through their numerous volunteer activities essentially direct all phases of CAS operations.

In one particular year, 902 CAS members volunteered to fill 1,359 positions. An effort of this scale, which is quite typical, generates a continuous need for volunteers. Each year about a third of these positions become available through normal rotation. These positions include the entire range of CAS activities: the examination committees, research and development activities, liaison representatives, and various program committees and speakers, who serve as faculty for these programs. We'd also like to thank AAA volunteers, meeting and seminar speakers, and Regional Affiliate program participants not listed here. We recognize that none of these activities can take place without the active participation of the many CAS volunteers and for this we thank you.

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BY MARTY ADLER

Making the Right Call

How do you participate in organized athletics after your playing days are over? From 1992 until this year, David Menning has officiated in high school football and baseball games. From 1996-2005, he was also an official at small college football games (not Division I) primarily as a linesman/line judge.

David was a wide receiver at Northwestern College in Iowa, and played shortstop and third base on the college baseball team. The football team was very good. It made the NAIA playoffs in his last two years, a time when only eight schools qualified. Although the football team lost in the opening round his junior year, the next year they made it to the finals. Unfortunately the elements were against them. Being accustomed to the speed and finesse of a wide-open passing game, the team was hampered by playing in the cold and mud. Their opponents, Findley of Ohio, had a big fullback who just plowed through the mud. Findley won big.

About five years after achieving Fellowship, David decided to get back into organized athletics and contacted the Illinois High School Association. After registering and paying the fees, the IHSA sent the information for clinics, rules meetings, and the testing dates. After officially registering with the IHSA, David had to contact the athletic directors for games. The procedure for college was somewhat different. A supervisory board oversees the assignment of officials to games in Illinois, Wisconsin, and Iowa. You have to send them an application with appropriate recommendations. If accepted, they put you through the tests and clinics, after which you are assigned to games and a crew. Usually a new official gets a limited number of games early in his career and then works up to a full schedule over time.

David found the excitement of officiating similar to that of playing, although the preparation was obviously different. His career highlight was being the line judge at the 2004 NAIA National Championship game between Carroll College of Montana and St. Francis of Indiana in Savannah, Tennessee. "I always enjoyed being part of the game. I'll never forget the thrill of walking on the field for the National Championship game in Tennessee—thousands of people in the stands, the bands playing, and some of the best small college football players in the country intensely warming up for their big opportunity. It was a once in a lifetime opportunity for me," said Menning.

One of the most memorable plays occurred in that game. Carroll College was driving for the winning field goal at the end of the game. As they prepared for the winning field goal kick on 2nd down, the snap to the holder was high. Instead of panicking or making a bad play, the holder immediately spiked the ball, which is legal in college football. It is ruled an incomplete pass and the ball goes back to the line of scrimmage for 3rd down. On 3rd down Carroll kicked the winning field goal to win the game. David was told the play was so unique that it was shown on ESPN's *Sports Center* the next week.

The average fan might think that officiating is potentially risky. David wasn't concerned. There is security on site and the school administrations generally take very good care of the officials. Nevertheless, he has been in some hostile situations. He says that he has definitely developed his conflict management skills. The most common problem was when the coach complained about a call (or lack of a call). For example, if a coach claimed he missed a pass interference call or he called it and the coach did not think it happened. David would listen to them but try to calm them down first. "I've said to a coach, 'I'll be happy to discuss the call, but I need you to calm down first.' Sometimes if the argument persists, you tell them professionally, 'That is enough. We just need to agree to disagree.' Most finally get the point and move on to the next play of the game." David applies this skill to his work. For example, when talking to policyholders upset about a rate increase, he tries to calm them down, listen to them, and explain why his company raised their rate. He may end the conversation on a positive note by asking them about their work or other things of interest.

David also recalls a tense situation in 2006 while working a Regional Championship baseball game. The game was close and he was the first base umpire. At a critical time there was a crucial, very close play at first base. He called the runner out, thereby ending the home team's rally. The home team's fans behind the third base dugout were obviously upset and felt he made the wrong call. The head coach came running across the field, something David had seen several times in his career, and he expected to get a tongue-lashing. To his surprise, the coach got in his face and complimented him for the work he had done in the Regional Tournament. The coach said the only reason he came out to talk to David was to calm the fans down. It seemed to work, as the fans settled down some because they thought the coach really chewed him out.

Although now officially retired from both sports in order to devote more time to his professional duties and spend more personal time with his family, including new grandkids, he enjoyed giving back to the games in which he participated, and providing service to the schools, community, and the teams. He felt he was contributing to the development of young people, as the athletic field is really a classroom for developing life skills.

David Menning is Countrywide Pricing Director at State Farm Mutual Automobile Insurance Company in Bloomington, IL. AR

GLENN MEYERS

Should Reserves Include Risk Margins?—International Developments

As the actuarial profession develops methods (or models as the case may be) to predict the distribution of outcomes for a loss reserve, we should be asking what to do with it. Many actuaries have argued that we should recommend ranges for loss reserves rather than point estimates, as now required in various financial statements. When I first heard about this several years ago, I worried that posting reserves "within a reasonable range" could lead to inadequate reserves in cases where we should be the most concerned, i.e., when the reserves are the least certain.

As it turned out, I was not alone in this concern. An alternative to a range is a risk margin. Many have argued that the current American practice of not allowing insurers to discount reserves for the time value of money provides an implicit risk margin. Australian regulators now require insurers to add an explicit risk margin at least equal to the difference between the 75th percentile of total liabilities and the current estimate, each on a discounted basis.

A few years ago, the International Association of Insurance Supervisors (IAIS) supported discounted loss reserves with explicit risk margins, and asked the International Actuarial Association (IAA) to provide guidance calculating risk margins. But before discussing the IAA proposals, we should look at the context in which the IAIS intends to use risk margins.

Another initiative of the IAIS has been risk-based capital. Briefly stated, the purpose of risk-based capital is to make an insurer's required capital depend upon the risks it faces. The European Economic Community is moving toward this with their Solvency II initiative. Given that insurers often have long-term liabilities, the question of the time horizon for holding capital arises. The current thinking of the IAIS is that the time horizon for risk-based capital could be as short as one or two years. The rationale for this horizon is that by its end, the regulators should recognize that an insurer is in trouble and have enough time to take appropriate action. The most extreme action would be to liquidate the insurer and transfer its liabilities to other solvent insurers.

While risk-based capital has a limited time horizon, the risk margin will run for as long as the underlying liability remains uncertain. The purpose of the risk margin is to provide sufficient funds to provide for the orderly transfer of the liability to another insurer. Because of the differing time horizons, the accounting of the insurer's assets as the sum of (1) current estimates, (2) risk margins, and (3) capital is not arbitrary.

The IAA has formed the Risk Margin Working Group (RMWG) to flesh out the issues surrounding the risk margins. As part of the guidance given to the RMWG the IAIS has suggested that "acceptable methods should reflect the inherent uncertainty in the expected future cash flows and would be expected to exhibit the following characteristics:

1. The less that is known about the current estimate and its trend, the higher the risk margins should be.
2. Risks with low frequency and high severity will have higher risk margins than risks with high frequency and low severity.
3. For similar risks, contracts that persist over a longer duration will have higher risk margins than those of shorter duration.
4. Risks with a wide probability distribution will have higher risk margins than those risks with a narrower distribution.
5. To the extent that emerging experience reduces uncertainty, risk margins will decrease, and vice versa.

If one wants to use undiscounted loss reserves to represent discounted reserves with an implicit risk margin, characteristics 3 and (to some extent) 5 will be satisfied, but the remaining characteristics will not be satisfied. If one uses a percentile of the distribution of outcomes to calculate a risk margin, characteristic 3 will not be satisfied.

Admittedly, it might be possible to add some bells and whistles to these methods to satisfy all of those characteristics, but another proposal is gathering increased acceptance within both the IAA and the IAIS. The proposal is for a method called the cost of capital method, which calculates how much an insurer needs to transfer its liability to another insurer and provide for this other insurer's cost of capital.

A problem with a cost of capital risk margin is that while such liability transfers are occasionally done, the market for these transfers is not what one generally calls "active." So instead of getting a quote on a risk margin, one goes through a cost of capital calculation for a "reference insurer," which can be thought of as a typical insurer that would participate in this market. Cost of capital calculations are becoming common in pricing new business for insurers and reinsurers, and at least at a high level, the principles for such calculations are similar to liability transfers.

For more information, visit the Web sites for the IAA (www.

actuaries.org), the IAIS (www.iaisweb.org), and the Committee of European Insurance and Occupational Pension Supervisors (CEIOPS) (www.ceiops.org). The IAA Web Site has the latest working paper on risk margins along with comments. CEIOPS has been distributing a series of Quantitative Impact Studies (with the latest being designated QIS3) where participating insurers calculate capital requirements and risk margins. The purpose of the studies is to test for the suitability of the calculations and assess Solvency II's impact on balance sheets.

Searching through these Web sites should quickly convince you that there is a lot of momentum behind these efforts and they will likely affect all actuaries sooner rather than later. That being said, we should note that none of this is cast in stone—yet.

If anyone wants to provide input to this effort, the time is now. CAS members who want to provide input can contact Glenn Meyers, CAS representative to the IAA Insurance Regulation Committee; Ralph Blanchard, CAS representative to the IAA Insurance Accounting Committee; or Ed Ford, Chair of the CAS IAA Response Resource Committee. AR

SOA Implements a CERA Designation

In discussions concerning the actuary's role in enterprise risk management (ERM), the question of whether the actuarial profession should offer an ERM credential is often debated.

Recently, the Society of Actuaries (SOA) announced that it is offering such a credential—Chartered Enterprise Risk Analyst (CERA). SOA communications assert that the CERA credential provides the qualifications necessary to fulfill the role of risk analyst, risk manager, or chief risk officer. Although the requirements for earning the CERA designation are different from the requirements for the Associate of the Society of Actuaries (ASA) designation, CERA designees will also be recognized as Associates of the SOA.

CAS members who wish to pursue the CERA designation are certainly able to do so. Several of the examinations required for CERA qualification are jointly sponsored by the CAS and the SOA.

CAS Response

During the early stages of development of the CERA in September 2005, the CAS was given the opportunity to co-sponsor the designation, but declined. The CAS Board has always been focused on advancing member opportunities in ERM. Rather than promote ERM as a new area of practice with a separate designation, the Board believed positioning ERM as a new framework for the conceptualization of actuarial science would better promote member opportunities.

With the rollout of the CERA, the CAS Board affirmed its original response as most effectively advancing member opportunities in ERM. Core CAS practice areas—pricing, reserving, and capital management—are critical elements of insurer enterprise risk analysis and modeling. This means the skills developed through the CAS examination process are directly applicable within an insurer ERM framework, and beyond.

The CAS leadership is also committed to the continual strengthening of ERM training through the basic and professional education processes. The CAS strongly supports the joint Risk Management Section (co-sponsored by the SOA and Canadian Institute of Actuaries) as the best means for promoting member opportunities in ERM. The Joint Section will provide continuing education on ERM, conduct research to address unanswered ERM questions, promote actuarial skills in addressing ERM issues both within and beyond traditional practice areas, and continue to operate the enormously successful ERM Symposium (see www.ermsymposium.org).

The North American Actuarial Council, which is comprised of the presidents and presidents-elect of the various North American actuarial professional associations, also recently issued a statement of support for the Risk Management Section. In the statement they asserted that actuarial techniques are essential components of ERM.

The CAS is also monitoring the activities of a group of international actuarial organizations that are exploring development of a global ERM designation.

Your Feedback Counts

The CAS continues to be committed to ERM, as reflected in the Centennial Goal, which articulates the vision that "CAS members will advance their expertise in pricing, reserving, and capital modeling and leverage their skills in risk analysis to become recognized as experts in the evaluation of enterprise risks, particularly for the property and casualty insurance industry."

The CAS Board and Executive Committee want your feedback on both the CERA and the CAS strategy for advancing member opportunities in ERM. This is a rapidly evolving area, and member feedback is essential. Information from all the many perspectives represented by our diverse membership will ensure the CAS makes the best possible decisions for the health and vitality of the profession. E-mail your feedback to Mike Boa mboa@casact.org and use the subject line "CERA Designation." AR

A Round Table Discussion on the AAA Qualifications and Continuing Education Standard—Part 2

By Arthur Schwartz

In August 2007, the American Academy of Actuaries (the Academy) approved a new standard on Qualifications and Continuing Education that will have important implications for the actuarial profession in the United States. The standard will be effective beginning January 1, 2008. It is no understatement that this standard represents a historic moment for the actuarial profession in the United States.

This is the second in a series of roundtable discussions that *The Actuarial Review* will be conducting on this new standard with the view of educating the profession and illuminating the rationale behind the changes. The statements and opinions of the discussion's participants are their own and are not the official commentary or position of the Committee on Qualifications, the Academy, or the CAS. Your comments on these discussions are welcome and may be sent to *The Actuarial Review* at ar@casact.org

Our panel for this second discussion includes:

Mary Frances Miller of Select Actuarial Services in Nashville, Tennessee. Mary Frances is a CAS past president and served on the AAA Committee on Qualifications, which was responsible for drafting the standard.

J. Scott Bradley, president of Quanta Reinsurance Ltd. in Hamilton, Bermuda. Scott served on the CAS Education Policy Committee and now chairs the CAS Task Force on Continuing Education. He brings a unique perspective as a Canadian-born Fellow of the CAS practicing in a foreign jurisdiction.

Bruce Schobel, vice president and actuary with New York Life Insurance Company in New York City. Bruce is president-elect of the SOA and also serves on the Boards of the AAA and the CCA. The CCA, as many know, was in the forefront of the movement toward mandatory CPD.

Mary Downs, general counsel and director of professionalism with the American Academy of Actuaries.

Schwartz: *Would it be helpful to have a decision tree or flow chart to help actuaries determine if they're qualified or not to issue an SAO (statement of actuarial opinion) or a PSAO (prescribed SAO such as for an insurance company) in terms of whether they meet the general or specific qualification standards?*

Downs: I don't have a problem with the idea of a flow chart. However, none of us can speak for the Committee on Qualifications. The chart's fine as long as it's as long as it's understood for what it is—that is, it's not official.

Schwartz: *Referring to Section 2.1, it seems that before an actuary issues an SAO, the actuary must meet the General Qualification requirement and a "relevant education" requirement. The General Qualification requirement refers to someone (including any member of the five United States actuarial organizations or a fully qualified member of another IAA member organization), who has "three years of responsible actuarial experience." What is considered "responsible actuarial experience"? Also, what does it mean to say the actuary needs "to be knowledgeable...of the law… applicable through examination or documented professional development"?*

Miller: "Responsible actuarial experience" is no different from the current AAA requirement of three years' responsible actuarial work to become a member of the AAA.[1] It's not making copies at a summer internship, but it also does not have to be at the level of a credentialed actuary.

1 The Academy does not require letters from any actuaries for a candidate to become an Academy member.

Schobel: The big difference is that you're not getting a third party to certify that your experience is responsible actuarial work. It's self-policed.

Bradley: I would argue that "documented professional development" does not have to be given by an actuarial organization. While sessions at CAS or SOA meetings on tax developments would certainly count as documented professional development, there regularly are tax seminars in Bermuda given by law firms. If you spend a day with them, they're typically in much more depth than the "concurrent sessions" at an actuarial seminar.

Schobel: One comment that's been made about the new CPD requirements is that we're just trying to increase attendance at our meetings. Nothing could be farther from the truth. We don't care where actuaries go to maintain their knowledge. We simply want them to be, well, more professional!

Bradley: I don't know of any exams on applicable U.S. or Canadian law other than those of the SOA or CAS.

Miller: If there was a good exam on law from a non-actuarial organization, that would qualify. To give an actuarial example, there's less and less United States law on the Canadian exam covering law and regulatory matters. A person who passed the Canadian exam could do documented reading or take a seminar or exam covering insurance law in the United States that would be fine, too. Or, if an actuary were also an attorney, they would have knowledge of applicable law from outside the actuarial exams.

Schwartz: *Referring to Section 2.1, issuing SAOs requires someone at the highest level of an IAA member organization (such as a Fellow with the CAS) with at least "one year of responsible actuarial experience" (or if not a Fellow, then they need at least three years' responsible actuarial experience) "under the review of an actuary who was qualified to issue the SAO at the time the review took place under standards in effect at that time." Please comment on what extent of contact is intended by "under the review." For example, does this require a supervisory relationship or can the qualified actuary be an actuary consulting for the organization for which the opining actuary is employed? The language appears to require the opining actuary to assess whether the other actuary is qualified to issue an SAO; isn't that going to be difficult? Also if the standards for issuing opinions change, is it fair that the opining actuary is issuing opinions, perhaps years after the one year (or three years) of review by the qualified actuary?*

Miller: Addressing the last question first, you don't ever lose your basic qualification.

Bradley: Plus you've got to have documented professional development to show you're staying on top of things.

Schobel: If you're working in an area, and you're not qualified to issue SAOs, there has to be someone else, probably in the same organization (though they can be elsewhere) who's reviewing your work. That's the "supervisory relationship" we're talking about.

Bradley: Somebody doing technical work like spreadsheets may, to an outside observer, be doing responsible actuarial work and may, to that observer, be qualified as an actuary, even though they wouldn't necessarily meet the true qualifications.

Schobel: If you're doing actuarial work and people are relying on it, then it has to pass through the hands of a qualified actuary. That's the kind of review relationship we're talking about.

Miller: That person doing the review doesn't have to be from the same employer. What if you're an Associate and nobody ever looks at your work? You're not going to be able to issue SAOs. You're going to have to find an actuary to look at your work. Of course you could simply get your Fellowship. Otherwise, if you're the only actuary for an organization, then you have to get some periodic outside review. It's possible to obtain this outside review, if you don't work for a qualified actuary, but it's going to require some significant effort.

Schwartz: *The qualified actuary could be a consultant?*

Miller: Sure, if an actuary doesn't yet meet the qualification standard and is going to be the only actuary at an employer, the actuary should notify management that they are not going to be considered qualified and that they are going to need the employer to have their work reviewed by a qualified actuary.

Downs: What may be more helpful for your readers is to focus on the general concept rather than the specific relationship between the opining actuary and the reviewing actuary. The general concept is making sure that your work is reviewed by a qualified actuary who takes responsibility for it.

Bradley: Getting back to Mary Frances' example, if you're a student, then you're not a full member of an IAA organization, so this section does not apply to you.

Miller: My example is assuming the student is going to become a full member of an IAA organization. If I were that student, I would tell my employer, "Until I become an Associate, the work I do for you won't be the work of a qualified actuary. And I still won't be qualified until my work has been reviewed."

Bradley: There are lots of people, who sign opinions for captive insurers. They're bright people often doing good work but they've never passed an exam.

Schwartz: *Under certain circumstances they would be considered qualified?*

Bradley: Yes, although it would have to be very limited circumstances such as for a captive in certain jurisdictions. (As an aside, this is not the case in Bermuda.)

Miller: But under the profession's qualification standards, such a person would not be considered qualified, even if they are legally permitted to sign opinions. So far as the standards changing, once you meet basic education that's it. You do have to keep up with continuing education. Otherwise if the standard changed then no one would be considered qualified!

Bradley: There's material on the current exams that wasn't there when we went through the exam system.

Schobel: Take financial economics for example!

Schwartz: *Referring to Section 2.1, the "relevant education" section places emphasis on being qualified in a specialty track. The SOA currently offers five specialty tracks while the CAS does not offer any specialty tracks. In your opinion, will this section influence the CAS to consider adding several specialty tracks? Why or why not? What areas might those tracks cover?*

Miller: There's no real effect of this. It's just trying to give you some guidance in case you're considering changing practice areas. Even if you're a Fellow you can't jump into a new field and automatically be considered qualified.

Schobel: If the CAS were to carve up its universe into separate tracks that would make it harder for CAS members to be qualified. My experience is in track A, and now I'm going to practice in track C.

Miller: The CAS had talked about offering some options towards the end of Fellowship though I don't know where that discussion has gone, but the kind of options that have been discussed would not limit a new CAS Fellow's ability to provide actuarial services in any area of property/casualty work.

Schwartz: *Let's consider things from the SOA perspective. If I'm going through the SOA exams and I specialize in a track of "retirement benefits," and I'm now working for a life and health company with no retirement benefits work. Then….*

Schobel: Before issuing any SAOs, you would have to get one year's experience in the new area if you're a Fellow.

Miller: If you're an Associate, you would need three years of experience in the new field.

Bradley: Changing the perspective back to the CAS, if I'm an FCAS and go work for a life insurance company, and I put in my one year of responsible actuarial work, then it would seem that I'm qualified to issue SAOs.

Miller: You do need that one year and you might qualify. It's up to you to make that determination of whether you are qualified or not. The actuary who succeeded me at American States Insurance Company was an FSA. After a single year he was very qualified to do an awful lot of property/casualty ratemaking work. Was he qualified to do everything in property/casualty? No, but he was certainly qualified to issue statements of actuarial opinion in the property/casualty field. And, he did!

Schwartz: *We covered that question real well.*

Miller: Even if you're a Fellow, if you didn't study it, then you're not going to be ready on day one. However we don't want to make it impossible to change fields. We tried to strike a balance.

Schwartz: *In this respect, the revised AAA standard represents a historic moment for the actuarial profession in North America. Previously, if you were an FSA and you now wanted to work in property/casualty, you had to go ahead and take the CAS exams, and vice versa.*

Miller: Actually that would be true only if you wanted membership in the CAS. You could go ahead and practice in the property/casualty field. That's always been true, and certainly people have done it but without any guidance; now our revised standard requires them to get some continuing education and experience. Simply working in the other field of practice wouldn't get you qualified to sign the NAIC Annual Statement blank. However, you could certainly do work as an actuary. If you wanted to sign the NAIC opinion for your company, though, then you would have to go through the Casualty Practice Council.

Schwartz: *Referring to Section 2.2.7, under "Other Activities," what qualifies as "actuarial literature" or "papers…on relevant technical or professional topics?" For example, would "actuarial literature" include only those texts written by actuaries? Or can it include texts written by non-actuaries on issues such as insurance law, risk management, enterprise risk management, economics, accounting, statistical modeling, or game theory? What would not qualify?*

Schobel: It can certainly include papers written by non-actuaries. These appear in actuarial journals all the time.

Miller: If it's relevant, use it.

Bradley: Meetings with your organizations' legal, underwriting, claims, or tax department can be relevant.

Schobel: Again, it's self-policed.

Schwartz: *Referring to Section 2.2.9, if an hour is defined as fifty minutes, and a continuing education activity lasts for 90 minutes; would that count as continuing education of 1.5 hours or 1.8 hours?*

Miller: We actually got feedback that record keeping would be more difficult if it were one hour. Most seminar sessions end at fifty minutes.

Schobel: The ninety minute session counts as 1.8 hours.

Schwartz: *Referring to Section 2.2.9, and to Appendix 5, are the "hours spent on general business courses and*

educational materials" that are limited to 3 hours per year, being defined to include the required 3 hours per year of "general business skills"? Do these hours include the requirement of three hours of "professionalism"?

Schobel: The short answer is no; these two areas, "general business skills" and "professionalism" are actually quite distinct. We were trying to limit the time on general business courses. Instead, we want actuaries to bone up on their actuarial knowledge, so we put an upper bound on how much "general business" education would count toward the requirement. On "professionalism" there is a minimum number of hours, with no upper bound; so they are quite different requirements.

Schwartz: *What are general business skills?*

Schobel: Communication, writing, public speaking, making presentations. All the things actuaries are accused of needing!

Schwartz: *Referring to Section 3.1.1 (the educational requirements for the specific qualification standard for issuing NAIC property/casualty opinions), it appears that a candidate could skip any exams offered by the SOA or CAS and simply take those exams that directly tested those topics. Why is there no specific requirement of obtaining an ASA or ACAS designation?*

Miller: You still have to meet the General Qualification Standard.

Bradley: We come back to the definition of "actuary" that's buried in the footnote on page one of the revised AAA standard. To do that, to be an "actuary," as defined there, you need some letters after your name.[2]

2 The text from the revised standard reads: "The word "actuary" as used herein means an actuary who is a member of the Academy, ASPPA, the CAS, the CCA, the SOA, or a member of any actuarial organization that is not U.S.-based but requires its members to meet the Qualification Standards when practicing in the United States."

Miller: You also have to meet a legal requirement. The requirements for actuaries who want to sign an NAIC opinion are only changed a little from the current standard. Everyone has to meet expanded continuing education hours, and actuaries who are newly becoming qualified will need to pick up the topic of reinsurance in addition to the other topics that have always been on the list.

Bradley: If you're an FIA working in the U.S., this section would apply.

Miller: Let's review briefly, let's suppose that you're an FIA and you come to the United States. What do you have to do to sign your property/casualty insurance company's NAIC reserve opinion? Well you have to either have taken exams on the topics listed there, offered by the CAS or the AAA, or you have to get equivalent education signed off by a qualified actuary. That's your basic education. In addition the law says the FIA must join the AAA and approach the Casualty Practice Council, must present their credentials, and then obtain permission from the CPC to sign the opinion. It's not easy.

Schwartz: *It's doable but it's not easy*

Miller: Each year the CPC looks at one to five applications and does not grant all of them.

Bradley: But it is important to remember that the definition of an SAO includes much more than just statutory opinions and reserve blanks.

Schwartz: *Thank you for a great discussion!*

Soft Market—Hard Choices

By Thomas Ryan, Chair, CAS Committee on Reserves

As we head toward year-end, many actuaries are preparing to perform loss reserve analyses in support of financial statements and Statements of Actuarial Opinion. The good news for the property-casualty industry is that, according to several sources, carried loss reserves were estimated to have been redundant at year-end 2006. Both Conning Research and Consulting and Morgan Stanley have estimated a redundancy of nearly 5% of carried reserves for the industry at year-end 2006. These estimates are a dramatic change from the deficiencies (generally accepted to have been in the billions of dollars) that existed in the industry in recent years. The view that reserves may be redundant for many companies and for the industry overall has shifted the interest and attention of many reserving actuaries to the variability in these reserves and stochastic reserving methods. It is important, however, that we not lose sight of gathering dark clouds on the horizon. These clouds do not belong to some looming natural catastrophe but rather of the rapidly advancing "soft" market for property/casualty insurance.

The current underwriting market (soft or softening—depending on your viewpoint) is characterized by increased competition for business in many, if not most, segments of the industry. This competition has led to decreasing rates and increasing coverage and will likely result in increasing loss ratios. While analyzing loss reserves is a complex endeavor in any period, estimating loss reserves in a soft market has proved especially problematic for actuaries in the past. The impact of the underwriting cycle on reserves is an area that has received much attention in the U.K., specifically within GIRO, and was the focus of a recent working party. The same level of attention has not yet been given in the U.S. to this issue. Recent results in the U.S. indicate a distinct correlation between the underwriting cycle and initial reserve adequacy.

Table 1 provides a summary of the initial reserve adequacy for the ten most recent accident years (1997-2006). Initial reserve adequacy is measured here as the difference between the carried net ultimate losses and defense and cost containment (DCC) expenses from the first evaluation of each accident year (at the 12-month evaluation) to the latest evaluation (year-end 2006). The accident years shown contain those from the last recognized soft market—roughly 1998-2001—as well as those from the following years in a hardening market. The data presented is taken from the 2006 industry aggregate Schedule P Part 2 for all lines of business combined as provided by Highline Media. The latest estimates of ultimate losses for each accident year are based on the evaluation at year-end 2006 and could continue to change, particularly the more recent years.

Table 1

Change in Total Carried Net Ultimate Loss and DCC ($millions)

Accident Year	12-month Eval Ult (First Eval)	YE 2006 Eval Ult	Change $	Change %
1997	183,587	182,196	(1,391)	-0.8
1998	192,760	202,699	9,939	5.2
1999	197,707	214,788	17,081	8.6
2000	210,237	230,155	19,918	9.5
2001	235,852	244,796	8,943	3.8
2002	233,241	233,235	(6)	0.0
2003	246,412	231,288	(15,124)	-6.1
2004	260,440	241,770	(18,671)	-7.2
2005	278,214	267,902	(10,312)	-3.7
2006	263,341	263,341	0	0.0
'98 - '01	836,556	892,437	55,881	6.7
'02 - '06		1,237,536	-44,112	-3.4
Total		2,312,170	10,378	0.5

As shown in Table 1, the net ultimate losses for accident years 1998-2001 increased by approximately $56 billion in total since the first evaluation of each year. This increase includes continued adverse development of $4.0 billion in calendar year 2006 alone. For each accident year, we graphed the percentage change from the first year evaluation for that year to the latest evaluation in Figure 1. This graph is an update of work done by Bob Conger and presented at the 2003 GIRO meeting and shows the cyclical nature and correlation of the adequacy of initial booked ultimate losses with the underwriting cycle. As shown in Figure 1, the soft market years (1998-2001) show an increase in ultimate losses since the first evaluation while the hard market years (post- 2001) are currently showing a decrease in ultimate losses.

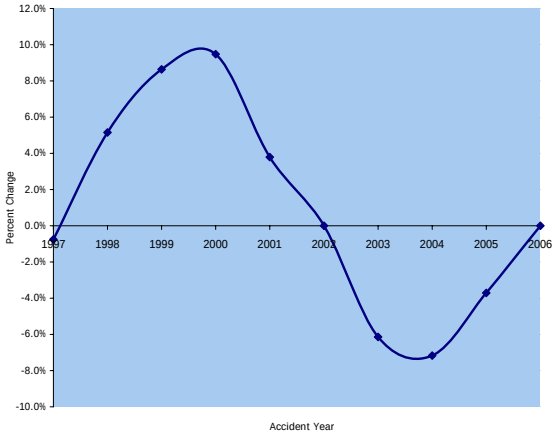
Figure 2 provides a view on how the net ultimate loss ratios for these same accident years have changed since their first evaluations (at 12 month's maturity). As shown in this figure and as expected, the soft market accident years (1998-2001) have the highest net ultimate loss ratios (all above 75% at the latest evaluation). The ultimate loss ratios for these years have been almost strictly increasing since the first evaluation. The remaining accident years

have lower loss ratios (all below 70%) and have nearly all been strictly decreasing in magnitude since the first evaluation.

In order to avoid a recurrence of the adverse development experienced in the last soft market or at least temper its magnitude, reserving actuaries need to account for the underwriting cycle in their thought processes and reserving approaches, especially in the early years of a soft market. Some basic suggestions to accomplish this follow:

1. **Know the Business**—Reserving actuaries must talk to underwriters and others in the business unit to better understand the business for which loss reserves are being estimated. In a soft market, the mix of business within a line can change as companies move strategically to write or re-underwrite certain territories or classes. These changes can affect the appropriateness of the use of historic internal or industry development patterns. It is also important to understand how much of the business is new business as

Figure 1
P&C Industry Carried Net Ultimate Loss Percent Change
from 12 Months Evaluation to Year-End 2006

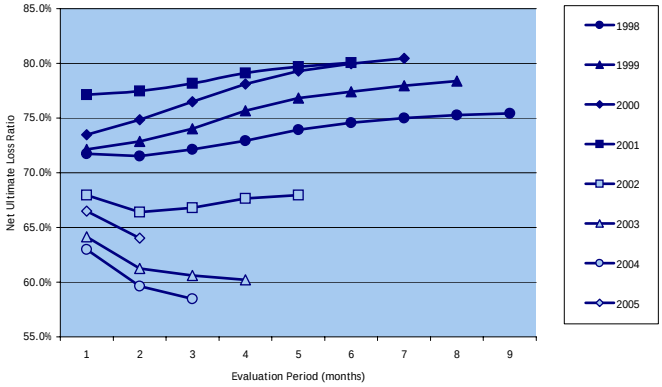


compared to renewal business. New business is traditionally "won" through lower prices or broader terms of coverage and often shows higher ultimate loss ratios than a review of historic loss ratios would indicate. Any expected loss ratios (ELRs) used in reserving methods for new business may need to be higher than those for similar renewal business.

2. **Track Changes**—In a soft market, it is critical to monitor average rate-level changes and loss trends in order to select reasonable ELRs. It is also important to monitor attachment points and deductibles as they tend to decline in a soft market while coverage limits rise. These changes could impact the length of historical development patterns and the appropriateness of using such development patterns. Also, the impact of changes to policy terms and conditions (which usually increase coverage in a soft market) on estimated losses is difficult to quantify but it is important for an actuary to understand in order to consider judgmental adjustments.
3. **Review Indicators**—Actuaries must compare internal data with available market information and attempt to reconcile the two. For example, are internal rate monitoring indications very different from published industry averages for certain segments? While the internal monitored results may be correct, it is valuable to understand why differences may exist. This knowledge will help in the selection of ELRs used in reserving methods.

These are only three broad suggestions to help actuaries begin to recognize the potential impact of underwriting cycles on the reserving process. For more in-depth discussion on the market cycle and its impact on the reserving process, two good resources to review

Figure 2
P&C Industry Ultimate Loss Ratio
By Accident Year and Evaluation Date



are (1) "Market Cycle Management: Blunt and Straightforward" by Mark Lyons of Arch Insurance—the keynote address at the 2007 Ratemaking Seminar and (2) "The Cycle Survival Kit" (http://actuaries.org.uk/files/pdf/proceedings/giro2003/Line.pdf), a working party paper by published by GIRO in 2003. Nonetheless, there is much more research to be done in this area, particularly in regards to the impact of market conditions on loss development patterns.

Many industry analysts have optimism that the current soft market we are entering will be different from those in the past due to increased discipline from the increasing role of enterprise risk management. Other leaders believe the fundamental economics of the insurance business have not changed enough from prior times and, therefore, the current soft market will end badly. As actuaries, we need to do our best to generate an accurate view of realistic outcomes based on our current knowledge of the business and market. By ensuring that proper impartial information is available, we can help ensure that well-informed decisions are made.

In his presentation at the CAS Ratemaking Seminar, keynote speaker Mark Lyons stated that one of the key objectives of an actuary in a soft market is to become unpopular. Continuing to use existing methods and assumptions without reacting to the underwriting cycle may be an easy choice for an actuary to make. Asking tough questions, digging deeper into the data, and providing potentially bad news early on about profitability is a hard choice. In this case, as it often is, the hard choice is the right choice for actuaries to make. AR

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(FCAS 1970) August 2007

Jeanne H. Eddy
(FCAS 1979) July 25, 2007

Frank Neuhauser
(ACAS 1976) June 16, 2006

Paul M. Otteson
(FCAS 1957) August 22, 2007

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