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Managing the risks from variable annuities—the next phase

by Phil Bieluch and Hubert Mueller

Variable annuities typically contain guarantees that expose the carrier to risks of the equities markets. These guarantees are either payable on death, such as a Guaranteed Minimum Death Benefit (GMDB), on policy surrender or withdrawal, such as Guaranteed Minimum Accumulation (GMAB) or Withdrawal Benefits (GMWB), or during the payout phase, such as Guaranteed Minimum Income Benefits (GMIB).

The emergence of new protection features on variable annuities has been a major driver of recent growth in sales. Despite last year's changes in the taxation of capital gains, which have lowered the attractiveness of variable annuities versus mutual funds, sales of variable annuities have returned to the levels of 1999, as illustrated in Exhibit 1 on page 4.

In this article, we will explore advanced risk management methodologies used to reduce the volatility of the financial results that may be associated with offering these benefits.

Background

The new protection features on variable annuities effectively guarantee that investors will get their principal back upon annuitization or withdrawal. GMWB, the newest kid on the block, guarantees that the investors will receive their money back over a period of 15 to 20 years, at a rate of 5 percent to 7 percent per annum, regardless of market conditions. Charges for this benefit range from 35 to 50 basis points (bps) of assets per annum. Approximately 15 companies currently offer a GMWB feature, typically as a rider.

GMAB guarantees that the policy will be worth a minimum amount at a given point in time (generally 7 to 10 years out). This feature typically has a charge of 25 to 50 basis bps per annum and requires policyholders to follow certain asset allocation strategies. Only a few companies currently offer this type of benefit.

A GMIB guarantees a minimum account value for annuitization, generally based on the initial principal accumulated at a rate of 3 percent to 5 percent per annum. The charge for this feature ranges from 30 to 55 bps per annum. It is offered by many of the larger variable annuity writers.

GMWB, GMAB and GMIB together are commonly referred to as Guaranteed Living Benefits, or GLBs. While the utilization of a GMDB would be expected to follow an actuarial table, the utilization of the GLBs is much tougher to predict since it is driven by policyholder behavior. Experience on the utilization of these riders is still limited and should be analyzed under a variety of market scenarios.

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inside

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Phil Bieluch
Editor responsible for this issue

All I really need to know I learned on the actuarial exams

by Phil Bieluch

While paraphrasing and adapting the title of a very popular book by Robert Fulghum, I am not going to talk about kindergarten, or every point in his book, such as sharing everything, playing fair, living a balanced life and saying you're sorry when you hurt someone. What I am going to discuss are two very important issues gripping the actuarial profession today.

How many of you feel the title of this editorial is true? I would be surprised if many of you raised a hand. Remember when you felt that passing that last exam meant that you were now an actuary and could do anything that the profession threw at you? That having that diploma in hand meant you were equipped with everything you needed for a successful career in the actuarial profession. Like most of us, you probably discovered that the exams did not always prepare you for the nuances of your job. Not to date myself, but during my exam days in the early 1980s, the 1958 CSO table, the 1959 Internal Revenue Code and 1959 Build and Blood Pressure Study were some of the major topics.

How employable would you be if the actuarial exams were your only knowledge base? Some may contend "not very." Does this mean the actuarial exams are at fault? No, not at all.

We are here to learn

Continuing education is a requirement of most professions, and some actuaries. The American Academy of Actuaries has requirements for those signing Prescribed Statements of Actuarial Opinions. There is a current debate going on as to whether these requirements should be expanded to include actuaries working within companies.

But requirements should not be the primary motivation for continuing education. Our focus should be the desire to grow in our profession. Knowledge is like branches on a tree. For a tree to develop, it must continually grow new branches, recognizing that some of the old branches—which were important in its formation—need to fall off and go by the wayside. Speaking of trees, good tree surgeons sharpen their chain saws at night knowing that the next day's work will go quickly and more effectively with tools that have been maintained and checked regularly.

Let's learn to read

The Society of Actuaries offers many ways to continue your education. I don't want to be like the priest whose sermon on not attending mass falls on the ears of those who do attend; but reading the Society of Actuaries' publications is one way to expand your knowledge on the latest topics affecting actuaries and the way we do business. Much is available online at the Society of Actuaries Web site—

www.soa.org—including, among other things, all the section newsletters and experience studies. In addition, the Exams and Education teams are implementing learning alternative methods from eLearning to validation of college credit. There are educational opportunities all around us.

Look at the blackboard

There are many actuaries who have not attended a formal SOA continuing education session in the over 10 years. Yet, it is still possible for these actuaries to keep up-to-date. Records are made of the panel discussions, initially by cassette tape and later in printed version on the SOA Web site. Many of the local actuarial organizations offer excellent programs throughout the year. Consulting firms offer specialized topic seminars and many companies have their own internal training. If you don't attend, you can and should at least keep up-to-date by reading the material of interest to you.

Join a circle

Another way to stay up-to-date is to join a committee, task force or section council. Many groups are seeking volunteers, so take a few minutes to look through the committee list, contact the chairperson and offer your services. You will gain respect both within your profession, and from your employer. Plus, you'll be involved in some of today's hot topics.

It's time for a test

Permit me to get back to the discussion of the requirements necessary to become an Associate or Fellow of the Society of Actuaries. As I have discussed earlier, the knowledge gained in taking the exams is a base from which actuaries must establish themselves as continual learners. Are the exams the only way to get this base of education?

I have my desk on the side of the class that says exams are not the only, and perhaps not the best way, to teach some of the necessary subjects to be an actuary. As someone who was once responsible for the development and grading of I-443U, Advance Valuation and Financial Report, I can attest to the fact that the exam only covered a general and minimal amount of these very important topics. It couldn't possibly cover much more material without an unwieldy syllabus, making this a permanent roadblock for individual life actuaries in the United States.

For a tree to develop, it must continually grow new branches, recognizing that some of the old branches—which were important in its formation—need to fall off and go by the wayside.

In my opinion, alternate seminars and college-level courses for some of the requirements that are more general—remember we used to have an English exam—are the only way to go. I believe employers want the best-trained actuaries within a reasonable period of exam travel time. Education requirements should be viewed as establishing a knowledge base and not a tool to limit the numbers in our profession.

I recognize these topics are controversial. But I note that another controversial topic is the widespread decline of the influence of actuaries within their organizations. I see actuaries becoming better known for their ability to understand the rules and regulations surrounding their insurance specialty, rather than for their business management acumen. Perhaps this is

evidence that education provided by alternate seminars and college courses may be more relevant to the executive management of the insurance industry than the content in the actuarial exams. For more information on this, read the article, "Expanding opportunities in traditional markets" on page 10. This problem may not be unique to actuaries in the insurance industry and I challenge anyone to point out to me a recent CEO in the insurance industry who left for a better job outside of the industry. Yet, there are many examples of people who have entered the insurance industry as CEOs from the banking and investment banking industries.

It's almost time for the bell

In summary, I challenge each actuary to continually update themselves with varying types of education—reading, joining a committee, taking a college course—whatever appeals to you the most. Don't rely solely on what you learned in the actuarial exams. As you learned in kindergarten, it was the students who learned their tasks the best who had the most recess time. Let us view the attainment of an ASA or FSA as the start of a never-ending journey of the pursuit of an ever higher standard.

Graduation time!

Variable annuities

continued from page 1

A recent CFO survey conducted by the Tillinghast business of Towers Perrin (“Tillinghast”) showed that CFOs were looking to revise their product design and further enhance their guarantees in response to competitive and regulatory pressures. Responding companies were generally moving toward more extensive scenario testing, and almost one third of companies expected to limit their sales because of scarce capital or concerns that their risk exposure is too high (see Exhibit 2 on page 5).

That was then ...

In the 1990s, a variable annuity writer reduced exposure to this risk by purchasing reinsurance for these benefits, which most of the major life reinsurers in the United States offered. The bear market of 2000 to 2002 caused many of these benefits to be “in the money,” resulting in a huge increase in the reserves for benefit payouts and a reduction in the asset-based premiums received for such features. Virtually all of the U.S. reinsurers that offered such coverage have withdrawn from this market since, with some posting reserve increases of several hundred million dollars.

With no major reinsurers providing coverage, variable annuity writers were forced to look for other ways to reduce their risk. Some companies have purchased long-dated over-the-counter options with the Wall Street banks. They soon discovered that the volatility embedded in these options caused option prices to be uneconomical when compared to the price they, and their competition, were charging for the benefits. Companies were left with no choice but to retain most or all of the risk on new variable annuity sales.

Despite last year’s changes in the taxation of capital gains, which have lowered the attractiveness of variable annuities versus mutual funds, sales of variable annuities have returned to the levels of 1999 ...

This is now ...

Recent changes in the regulatory environment for variable annuities have forced variable annuity writers to more actively address the management of risks from the guarantees. In particular, the proposed capital requirements for C-3 risk (“C-3 Phase II”), expected to be enacted for year-end 2004, will require less capital if a proper hedging program is in place.

At the same time, companies have been able to increase fees for GLB features without any adverse market consequences to date. This has allowed companies to more properly price for such features, including the cost of hedging the risks. Over the last year, there have been major advances with regard to the hedging of these risks. At last, capital market-type pricing is being applied to the options embedded in variable annuities.

Guarantees on variable annuities have option-like characteristics. For example, let’s say a variable annuity has been priced with a guaranteed benefit and a present value of profits has been developed, discounted at a risk-free interest rate. The same pricing analysis can be developed assuming a one percent change in initial assets to determine the Delta at each point in time. Actuarial modeling systems have now been developed to calculate these values (often referred to as the Greeks, see box on page 5) directly, using stochastic-on-stochastic processing tech-

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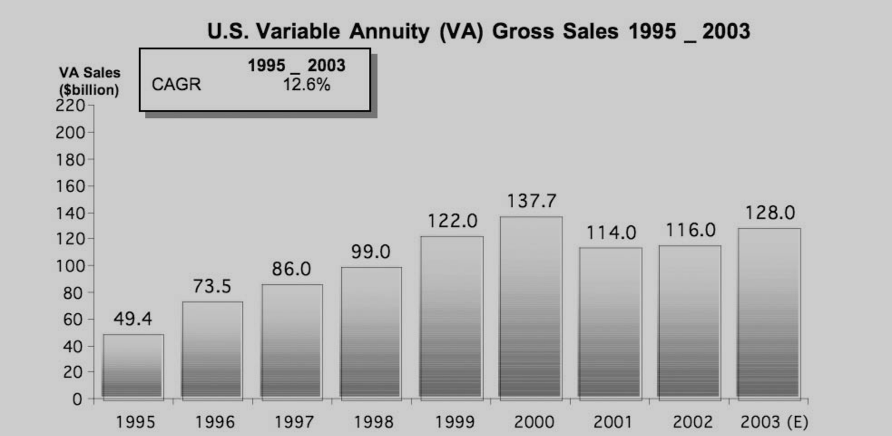
Exhibit 1



Source: Variable sales from Tillinghast VALUE Survey, includes all non-pension variable annuity premiums (first-year and renewal, separate account and fixed account). Fixed sales from LIMRA, includes deferred and immediate annuities, MVA, EIA, and structured settlements. 2003 forecast is based on annualized YTD 3Q03 sales results, with some adjustment.

niques. To develop risk profile curves, the calculation of the Greeks using such techniques is typically repeated on a monthly basis over the entire projection period for each of the scenarios.

testing" basis, i.e., by backtesting their effectiveness for actual recent market developments before going live with a hedging program.

Recent changes in the regulatory environment for variable annuities have forced variable annuity writers to more actively address the management of risks from the guarantees.

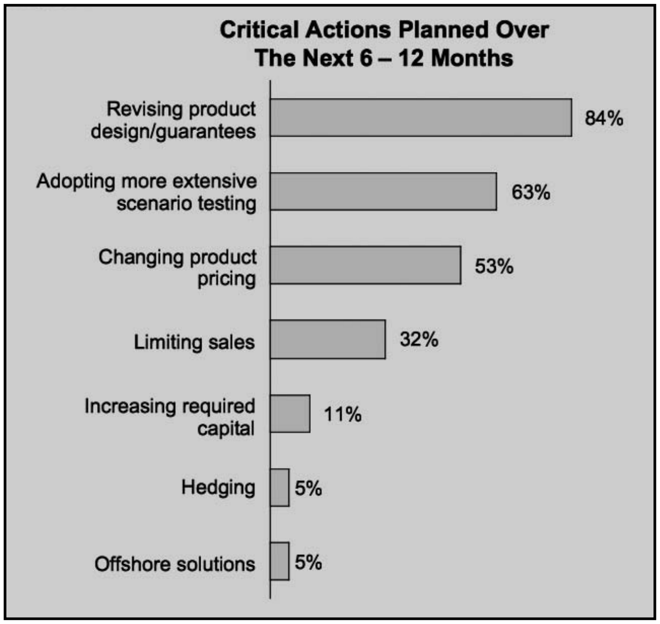
A company cannot buy options or futures on the funds that are actually used in a book of variable annuities. Instead, "least squares" or some other technique are typically used to calculate the best fit of a fund's historical performance to indices that have options and futures that are exchange-tradable, such as the S&P 500 and Russell 2000 indices. The exchange-traded funds probably will most likely not match the performance of the variable annuity funds exactly over time, with such variations referred to as "basis risk."

It is also common practice to evaluate various hedging strategies on a "mock

The simplest and most common form of hedging is a match of the Delta on variable annuities with options or futures on publicly traded indices. Increasingly, put futures are bought with a plan of closing those positions around one week prior to expiry and purchasing the next series of the same futures. The Delta is very close to one—and with little time premium involved in the purchase, the cost is the cheapest.

If the market decreases, the variable annuity book has a reduced profit, but the futures have an offsetting gain in value. Deposits are required to purchase futures, with increases required when the market moves opposite to your position. The ultimate cost of the future is not known, but payments must be managed in line with the change in the liability for the benefits.

Exhibit 2



Source: Tillinghast CFO Survey #6 (November 2003)

A more sophisticated form, and more costly hedging program, will also match the Vega of a block of business by buying options. Options or futures purchased for Delta hedging will expose the company to volatility risk. Options are generally exchange-traded for up to the next year. Options beyond that point are available from brokers on an over-the-counter basis. As they are not exchange-traded, the price will vary by broker and companies may want to receive quotes from various brokers for the same options. The longer the option purchased, the more premium will be paid to lock up volatility. By hedging Vega, companies address the problem of having the duration of these

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The Greeks

Delta
A measure of how much an option price changes given a unit change in the underlying stock/future price. Hedging Delta attempts to limit exposure to market movements.

Gamma
A measure of how fast Delta changes, given a unit change in the underlying stock/futures price. Hedging Gamma also attempts to limit exposure to market movements.

Rho
A measure of how much an option price changes for a one percent change in interest rates. Hedging Rho attempts to limit exposure to interest rate risk.

Vega
A measure of the rate of change in the value of an option for a one percent increase in volatility of the underlying asset. Hedging Vega attempts to limit exposure to changes in volatility.

Theta
A measure of the rate of change of an options value with respect to the passage of time. Hedging Theta attempts to limit exposure as it changes over time.

Getting real ... Life insurance regulation in the UK

by Michael Daly

The UK regulator of insurance, banking and investment management, the Financial Services Authority (FSA), has proposed a number of changes to the way in which UK life insurers will be regulated in future. Most of these changes will come into effect in late 2004 and are intended to:

- Improve the transparency of reserving for with-profits business.
- Enhance consumer protection.
- Require senior management to identify and control risks to their business, and to assess the capital required to cover those risks.
- Facilitate improved corporate governance.
- Standardise the approach to regulation across different financial service providers.

The proposals introduce an abundance of new acronyms to a list that already seems to be growing on a daily basis. This article explains one such addition, RBS, the Realistic Balance Sheet.

Companies that have aggregate with-profits liabilities in excess of £500 million will be required to perform both a regulatory and a realistic valuation of their with-profits liabilities.

What are the RBS proposals?

Companies that have aggregate with-profits liabilities in excess of £500 million will be required to perform both a *regulatory* and a *realistic* valuation of their with-profits liabilities. They will then need to hold reserves equal to the higher of these two valuations. This "twin peaks" approach is intended to ensure companies have adequate financial resources to meet the reasonable expectations of their with-profits policyholders in respect of future discretionary bonuses. In addition, the realistic peak will be more sensitive to market conditions. Together with proposed changes in the regulatory reserving rules, this is intended to prevent the forced selling of equities in already depressed markets, which has previously been required in order to safeguard ongoing regulatory solvency. Smaller with-profits offices may opt into this regime. Non-profit companies are not affected.

How will RBS work in practice?

The diagram to the right illustrates the proposed "twin peaks" approach.

Regulatory peak

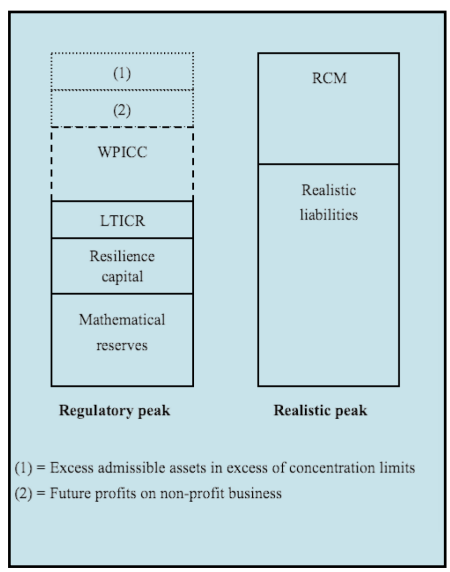
This is made up of the following:

- Mathematical reserves.
- Resilience capital requirement.
- Long-term insurance capital requirement (LTICR).

The *mathematical reserves* continue to represent a prudent provision for the guaranteed benefits, broadly based on current regulations. However, for the purpose of the "twin peaks" assessment only, there will be some relaxation of the current regulatory reserving rules. The most significant of these is the ability to reserve for conventional with-profits business using the gross premium reserving method.

The *resilience capital requirement* allows for the impact of adverse market movements on the ability of the fund to meet policyholder liabilities. This is similar to the current resilience test reserve except that, instead of forming part of the mathematical reserves, it is a separate capital requirement. This allows more flexibility in the capital that can be held and means that there is no need to hold a solvency margin in respect of the resilience requirement.

The *long-term insurance capital requirement (LTICR)* is broadly equivalent to the current Required Minimum Solvency Margin, formulaically prescribed by the European Union.



Realistic peak

This consists of:

- With-profits benefits reserve.
  This must be calculated using either a retrospective accumulation of asset shares or a best estimate prospective valuation of all future policy cash flows including future discretionary bonuses.

The need to calculate realistic liabilities will have a significant impact on companies' financial modelling requirements.

- Present value of future policy related liabilities. These include:
  - Planned enhancements to the with-profits benefits reserve (which cannot be financed from the current reserve plus future premiums).
  - Future costs of contractual guarantees, financial options and smoothing.
  - Any planned deductions for the costs of guarantees, options and smoothing from the with-profits benefits reserve.

- Realistic current liabilities.
  These generally represent a company's best estimate provision for short-term accounting liabilities.

- Risk Capital Margin (RCM).
  The RCM allows for the possibility that a company's realistic liabilities are higher than expected due to its exposure to market risk, credit risk and persistency risk. The RCM will be determined using a series of prescribed stress tests, which will be calibrated to represent the minimum requirement for "a well run firm, with a mature, relatively vanilla business". Where a company does not fit into this "plain vanilla" category, additional capital requirements will be picked up through the Individual Capital Adequacy Standards (ICAS) regime—see Figure 1.

Figure 1

ICAS

These proposals relate to all life insurance companies, regardless of their size and to both non-profit and with-profits business. Broadly, they will require companies to make assessments of the minimum capital required to cover insurance, market, operational, credit and other risks.

Companies will be able to make allowance for the effect of management actions, such as changes in future bonus rates, when assessing the impact of the RCM stress tests. Similarly, allowance must be made for a realistic assessment of policyholder actions in each scenario.

The need to calculate realistic liabilities will have a significant impact on companies' financial modelling requirements. In particular, when valuing the future costs of contractual guarantees, financial options and smoothing, companies must use either:

- A stochastic approach using a market consistent asset model.
- The market costs of hedging the guarantee or option.
- A series of deterministic projections with attributed probabilities.

Whilst these alternatives are available, it is likely that most companies will need to develop acceptable stochastic models. Deterministic approaches are unlikely to fully allow for the time value of options and, in many cases, the market costs of hedging a guarantee or option will not be readily observable.

Figure 2

PPFM

All companies writing with-profits business will be required, by 31 March 2004, to define and make publicly available the Principles and Practices of Financial Management ("PPFM") applied in the management of their with-profits business.

Each company's PPFM should include, inter alia:

- The methods used to determine the amount paid to with-profits policyholders.
- The company's approach to setting annual and final bonus rates.
- The company's approach to smoothing the value of with-profits contracts.
- Significant aspects of the company's investment strategy.

As a final comment on the realistic peak we note that, in determining the value of its realistic liabilities, a company must ensure any assumptions it makes are in accordance with its disclosed Principles and Practices of Financial Management (PPFM)—see Figure 2. Similarly, allowance for any management actions when determining the RCM must follow the strategy set out in the company's PPFM.

What reserves will companies hold under RBS?

Where the realistic peak exceeds the regulatory peak, a company must hold a *with-profits insurance capital component (WPICC)* to bring the regulatory peak up to the realistic peak. However, if the regu-

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The Board of Governors reports on SOA's strategic plan, organizational results and more

When the Board of Governors met on January 12-13 this year, a significant amount of time was spent reviewing the 2003 organizational results; discussing the integration of several models, systems and research results into a comprehensive strategic management system; giving input on the evolution of SOA's strategic plan; determining Board-level outcome measures; and exploring barriers to success.

2003 organizational results

SOA Executive Director Sarah Sanford presented the preliminary organizational results from last year. From a program standpoint, the organization is in an extremely strong position and progressing well toward its strategic initiatives. Results will be published in the May issue of *The Actuary*, along with the financials once the audit is completed.

Comprehensive strategic management system

Over the past three years, various strategic, operational and governance models and systems have been used at the Board level. A plan for integration and implementation was presented and discussed. This strategic management system is an evolving model that will help SOA leaders work more efficiently and effectively.

Evolution of the strategic plan

At the October 2003 Board meeting, the Board authorized the modification of the SOA's strategic plan. The updated plan incorporates motions passed by the Board resulting from the member and market research conducted over the past two years. Initiatives in the new strategic plan are organized around membership value, knowledge management, marketplace relevance and professional community advancement.

Board-level outcome measures

This exercise required Board members to brainstorm what successful implementation of the strategic plan would look like. Results will be forwarded to the Strategic Planning Committee for further refinement and implementation.

Barriers to success

The Board identified barriers for both the SOA and the actuarial profession. These barriers will be prioritized for research and discussed at upcoming Board meetings.

In addition, the Board of Governors:

- Approved the request of the Taxation Organizing Committee to establish a Taxation Section.
- Continued discussion of the SOA's international strategy.
- Reserved three of the 2004 Board seats—two from candidates whose area of practice is Retirement Systems and one for candidates from Canada.
- Created a Leadership Team consisting of the four presidents, the secretary and treasurer, and the executive director. This team is the principal committee for the oversight and management of the work of the Society of Actuaries.
- Approved the release of a response from the IAA Committee on Insurance Accounting to the International Accounting Standards Board (IASB)'s Exposure Draft 5 – "Insurance Contracts."
- Authorized creating a monthly electronic newsletter and evolving *The Actuary* newsletter into bi-monthly magazine.

Questions can be directed to Neil Parmenter at nparmenter@soa.org *or Cheryl Enderlein at* cenderlein@soa.org.

Life insurance regulation
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latory peak exceeds the realistic peak, no WPICC is required.

Companies may reduce the size of any WPICC they are required to hold by the amount of:

- Any excess admissible assets in excess of concentration limits.
- Any future profits on non-profit business written in the with-profits fund.

Under the proposals, the total capital that a company must hold to back its with-profits business is equal to the sum of the regulatory peak and any WPICC.

Conclusion
The introduction of RBS represents a significant development for life insurers and a major challenge for life insurance actuaries. In particular, some of the issues companies are likely to face include:

- Development and implementation of stochastic models to value guarantees and financial options (which dynamically allow for management actions such as reallocating investments or changing bonus rates).
- An increase in prudential capital requirements for some offices, at a time of capital squeeze for many.
- Presentation of RBS results and communication of the impact of the new regulations to key stakeholders, including the Board.
- Strain on resources, given the tight timetables and other proposed regulatory developments.
- Overall costs of implementing the change.
- Impact on product design, for example development of "new style" with-profits products and future provision/charging for guarantees and options.
- Future impact of RBS in managing their business.

This all comes at a difficult time for the UK life insurance industry. Life offices are still suffering the after-effects of difficult investment market conditions over the last two years, and are desperately trying to restore consumer confidence in the industry. It is also coinciding with preparations for the conversion to new global accounting standards in 2005, and occurring against the backdrop of significant proposed changes to the UK actuarial governance structure. Life in the "real" world certainly won't be quiet for actuaries working in the UK.

Further reading
- FSA consultation paper CP195 ("Enhanced capital requirements and individual capital insurers assessments for life insurers") published in August 2003. *http://www.fsa.gov.uk/pubs/cp/cp195.pdf*
- FSA policy statement PS167 ("With-profits governance and the role of actuaries in life insurers–Feedback on CP 167, made and near-final text") published in June 2003.

Michael Daly, FIA, works as a director in the Actuarial & Insurance Management Solutions practice within PricewaterhouseCoopers in the UK. He can be reached at michael.j.daly@uk.pwc.com. *Reprint permission courtesy of the Actuarial Society of India. This article appeared in the December 2003 issue of* The Actuary India.

Notice: Voting begins in March

Voting for the candidates on the first ballot for the 2004 Society of Actuaries election of officers and board members will be held electronically for all Fellows who have e-mail addresses on the SOA database.

To make certain the SOA has your updated e-mail address, please check your information on the online directory at *www.soa.org*. Voters will be able to download and print the biographical materials. First ballot voting will begin March 29.

Fellows who do not have an e-mail address on the SOA database will receive paper election materials in the mail. Voters will have three weeks to cast their ballots.

For technical questions related to electronic voting, please e-mail Margaret Ann Jordan at *elections@soa.org*.

For general questions about the first ballot election, please contact Karen Gentilcore at the SOA office – phone: 847.706-3595; e-mail: *kgentilcore@soa.org*.

Expanding opportunities in traditional markets

by Mike Kaster, FSA, SOA staff leader for strategic planning

The strongholds of the actuarial profession have long been traditional markets, including property insurance, casualty insurance, life insurance, health insurance and pension benefits. But, are our positions in these markets really as strong as we think? Has the profession been able to remain relevant during the past several years, when the market conditions and environment have been rapidly changing? How do we expand opportunities in traditional markets?

The Society of Actuaries' Strategic Planning Committee (SPC) has recently explored these questions through surveys of both members and employers. A major focus of this research, which was conducted by Leading Solutions Group and ERIN Research, was expanding opportunities in traditional markets, such as insurance companies, reinsurance companies and consulting firms. Since the vast majority of SOA members work for these traditional employers, knowing and understanding how leaders in these types of firms feel about the actuarial profession is critical to answering the question of the relevance of the profession. The survey findings, which can be reviewed in-depth at *www.soa.org/strategic/strategic_planning.html*, have guided the Board of Governors to initiate plans to equip actuaries to achieve expanded roles in traditional markets. The purpose of this article is to present the specific findings that motivated the Board to pursue these initiatives.

Due to a wide variety of influences ranging from regulatory changes to market globalization, traditional employers are facing increasingly complex risks, requiring expert advice on enterprise-wide risk management. Who do employers look to for this expertise? While many traditional employers still rely on actuaries in areas where industry regulations mandate actuarial involvement, they do not necessarily favor actuaries when it comes to filling roles in risk management. In fact, they often look to competing professionals, including CFAs, MBAs and those holding advanced finance degrees. The employer survey indicates that nearly two-thirds percent of traditional employers report that actuaries in their business are indeed facing more competition than in the past (see Figure 1).

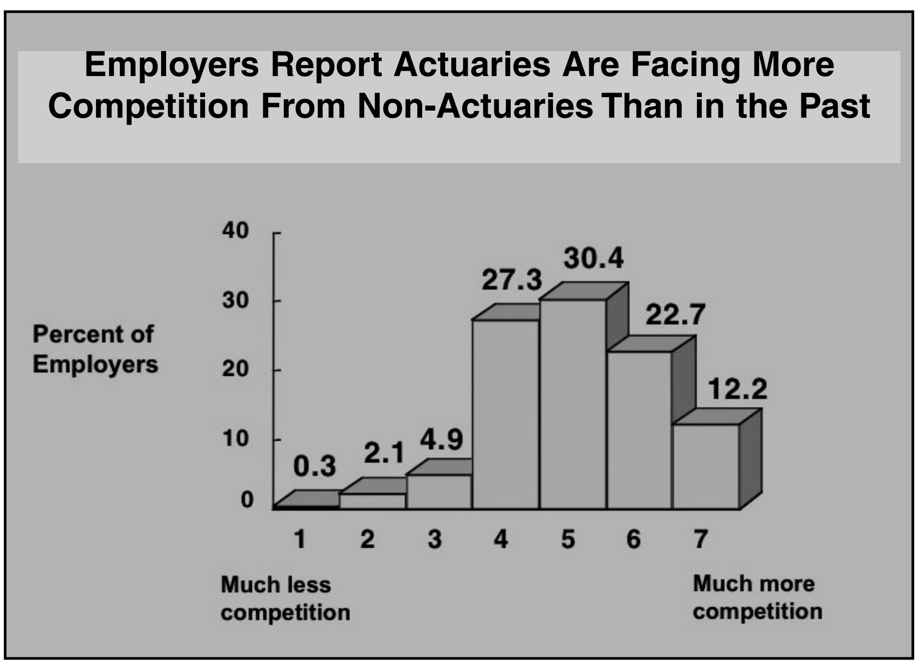
... some actuaries are beginning to look outside the actuarial profession for additional credentials.

Our ability to compete in the marketplace is contingent upon our image among employers. It is for this reason that the recent SOA employer survey asked respondents to rank actuaries on various skills and characteristics (see Figure 2 on page 11). They were also asked to rank competing professionals on the same measures.

Actuaries ranked higher than their competition in such areas as quantitative modeling, solving complex problems and financial assessment/ reporting. But actuaries were consistently given lower marks in such areas as business communication skills, business acumen, focusing on the big picture and being proactive. In other words, traditional employers view actuaries as possessing the right technical skills, but they are not as confident in our leadership and communication skills.

Additionally, anecdotal evidence suggests that fewer actuaries today are entering senior leadership roles for traditional employers.

Figure 1



In an effort to expand their career options, some actuaries are beginning to look outside the actuarial profession for additional credentials. According to the member survey, the non-actuarial credentials most commonly sought after are CFA and MBA. Members report that they are seeking these credentials in order to increase their industry knowledge, improve business skills, and challenge themselves intellectually (see Figure 3).

Interestingly, many members report that the actual impact of the their non-actuarial credentials did not meet up to their original expectation. It is worth noting, however, that while few members pursue additional credentials for the purpose of intentionally improving their communication skills, 40 percent report that their communication skills did improve as a result of the process of attaining such credentials.

While a number of actuaries are looking outside the profession for professional development, the member survey indicates that the majority of members want the SOA to help them acquire the skills needed to meet marketplace needs. More specifically, most members want the Society to help them develop business savvy—the ability to create and communicate common sense strategic solutions to business problems. This can be accomplished by evolving how we deliver our continuing education events or partnering with experts on the subject to deliver education. To date, the SOA is considering all possibilities.

... the SOA must prepare actuaries for expanded opportunities in risk management and business leadership.

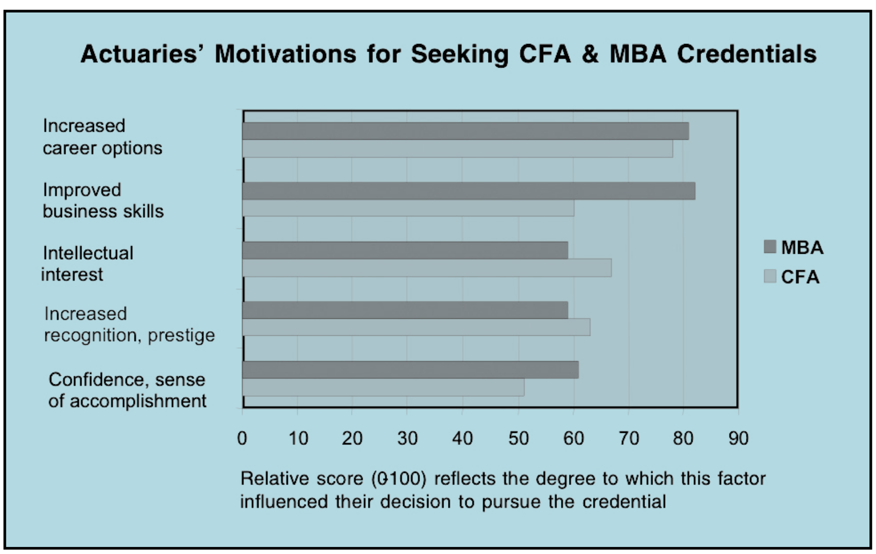
After analyzing the member and employer survey findings, the Strategic Planning Committee has drawn a critical conclusion—in order to address the long-term growth and vitality of the actuarial profession, the SOA must prepare actuaries for expanded opportunities in risk management and business leadership. This does not mean that the profession will need to become exclusively business leaders, but that we need to position actuaries to be able to take these leadership roles.

This past October, the Board of Governors agreed that such initiatives must be given top priority and they are currently in the process of incorporating them into the SOA's strategic plan. This updated plan will provide future leadership with a clear road map to guide them toward the realization of the SOA's vision—for actuaries to be recognized as the leading professionals in the modeling and management of financial risk and contingent events.

Figure 2

Employers' Rating of Actuaries Skills	
Highest Performance Rating	• Ethical • Quantitative (Modeling) • Solving Complex Problems • Financial Assessment and Reporting
Lowest Performance Rating	• Bold, Takes Informed Risks • Business Communications Skills • Proactive • Can Focus on Big Picture • Business Acumen

Figure 3

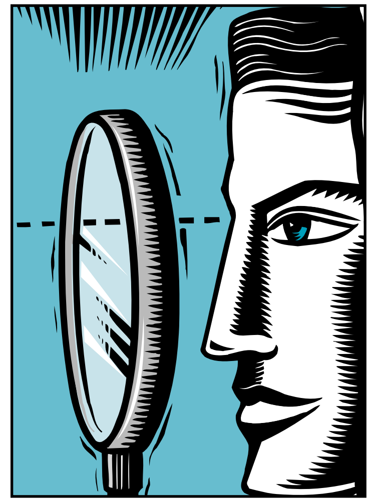


Taking a closer look at the IAA!

"The IAA (International Actuarial Association) is the representation of the actuarial profession at a global level," said Stuart Wason, chairperson of SOA's International Policy Committee. "Increasingly, public interest issues that involve the skills of actuaries (e.g., social security, pensions, insurance, etc.) are of global, not just local interest. Many of the stakeholders in these issues (e.g., accounting profession, supervisory bodies, etc.) are seeking global answers to these issues. The IAA has become increasingly active as a forum for global debate on these key public interest issues because many of the stakeholders in the work of the actuarial profession require a global response."

All full member organizations—63 in all—must be in compliance with the international guidelines by 2005. The 10 subjects on the IAA's core syllabus are:

- Financial mathematics
- Probability and mathematical statistics
- Economics
- Accounting
- Modeling
- Statistical methods
- Actuarial mathematics
- Investment and asset management
- Principles of actuarial management
- Professionalism



The main purpose of the guidelines is to facilitate developments in the globalization of education systems.

One of the issues the IAA's Committee on Education is chiefly focused on at present is developing a set of international guidelines for basic actuarial education. The group is comprised of 25 members, including SOA members Cecil Bykerk, FSA; Robert Brown, FSA; Daniel McCarthy, FSA; and Robert Stapleford, FSA, who represent the various North American actuarial organizations.

"This project has been several years in the making," said Martha Sikaras, SOA manager, global initiatives. "The main purpose of the guidelines is to facilitate developments in the globalization of education systems. In the future, individuals evaluating actuarial qualifications will know that a qualified actuary from an IAA member organization will have received education in a set of fundamental subjects. Naturally, national organizations will still dictate specific practice requirements as well as providing any necessary higher level and continuing education in the respective areas."

Other committee highlights

- Social Security Committee—In October 2002, this committee finalized guidelines pertaining to Social Security. The guidelines are available at:

  http://www.actuaries.org/members/en/committees/SOCSEC/documents/SS_Guidelines_final_en.pdf

- Insurance Regulation and its Working Party on Solvency. As part of the response of the IAA to the International Association of Insurance Supervisors (IAIS) paper "On Solvency, Solvency Assessments and Actuarial Issues - An IAIS Issues Paper," the IAA offered to support the IAIS in developing a solvency framework, consistent with the proposals for a new international accounting standard. The Working Party released its final report in the fall of 2003. Visit the following Web site for more details:

  http://www.actuaries.org/members/en/committees/INSREG/documents/Solvency_Report_Intro_en.pdf

- Committee on Insurance Accounting—one of the IAA's oldest committees—is currently chaired by SOA member and Past President, Sam Gutterman. This committee addresses professional issues of international relevance for actuaries, accountants and auditors dealing with the financial reporting of insurance, including development and maintenance of IAA actuarial standards of practice relating to insurance financial reporting and auditing.

Member sections

The IAA has four member sections and a newly christened 5th section, PBSS. These sections operate much like SOA sections by providing continuing education and directed information and services to interested members.

- The oldest is ASTIN—Actuarial Studies In Non-life insurance—that is, property casualty insurance.

- AFIR—Actuarial Approach for Financial Risks, formed in 1986.

continued on page 17

A best-seller in the making ... New M&A reference book to debut in 2004

by Jacque Kirkwood

Jim Toole and Tom Herget did not intend to write a book together. The idea surfaced as the two were working on a merger and acquisitions (M&A) monograph two years ago.

"During the course of writing the monograph, I realized there was a tremendous lack of published information regarding both actuarial methods and the role of the actuary in M&A transactions, leaving a significant hole in the actuarial literature," said Toole. "Tom and I were so focused on the monograph that I put the idea on hold."

A year later, the writing bug bit again and Toole knew exactly whom he was going to call upon to help him with this venture.

"I had some experience in the publishing realm with the GAAP textbook, and was excited at the prospect of teaming up again with Jim," said Herget. "Plus I always enjoy a good challenge."

The two met in Chicago in March 2003 and spent the day brainstorming. What started out as a small book with a few chapters has grown into a multi-purpose text/reference book. Eleven chapters address everything from soup to nuts, including details of the M&A process, finance, valuation techniques, tax, accounting, merger integration and due diligence.

"We also included a chapter entitled, 'Tales from the crypt,' that will highlight M&A projects that actuaries have been involved in," said Herget. "This chapter will reflect on some of the real-life challenges of M&A, straight from the horses' mouths, so to speak."

The audience for this book is a broad one, covering actuaries from the various disciplines, as well as professionals in accounting, legal and investment banking, employees of insurance and non-insurance companies and actuarial and business school students.

"Another feature that we hope will make this book jump off the shelf is how we've integrated the importance of the roles actuaries can play in M&A transactions outside of the insurance industry," said Toole. "We believe this will attract a non-traditional audience."

Both agree that the feature that will be especially helpful to readers is the fact that as a reference book, each chapter stands on its own.

"You don't have to finish Chapters 1 and 2 before you read Chapter 3," added Herget. "Pick up the book, find what you're looking for and read what you need. We purposely designed it this way for ease of use and efficiency."

Both Toole and Herget are quick to admit that the "we" they refer to goes well beyond their dynamic duo.

"We went out of our way to find a team of experts representing a full spectrum of viewpoints from across the industry," said Toole. "Their input and dedication to this project has been an impetus for all of us to give 110 percent to make this book a one-of-a-kind text and reference source."

The team includes:

- John Butler, vice president, Fox-Pitt, Kelton Inc., New York
- Tom Corcoran, principal, Tillinghast-Towers Perrin, Connecticut
- Michael Gabon, president, AIRCO Ltd, Bermuda
- Alan Hines, principal consultant, Pricewaterhouse Coopers LLP, Massachusetts
- Ken LaSorella, vice president, US GAAP, SunLife Financial, Massachusetts
- Hugh McCormick, partner, Le Boeuf, Lamb, Greene & MacRae LLP, New York
- Owen Ryan, insurance industry leader, Deloitte Touche Tohmatsu, New York
- Dale Yamamoto, consulting actuary, Hewitt Associates LLC, Illinois
- Laird Zacheis, Milliman USA, Illinois

"We'd also like to extend our thanks to Shirley Hwei-Chung Shao, FSA, and Clay Baznik, SOA publishing director, who got the ball rolling on this project," added Herget. "They provided valuable guidance regarding publishing and were responsible for securing funding."

Toole and Herget hope to introduce their new M&A text/reference book at the SOA Annual Meeting in October. Stay tuned for more information about this book that promises to be a best-seller!

Jim Toole is managing director, life and health, MBA Actuaries in Winston-Salem, North Carolina. He can be reached at Jim.Toole@MBAActuaries.com. *Tom Herget is executive vice president, PolySystems Inc. in Chicago. He can be reached at* therget@polysystems.com.

Getting published

by Cori E. Uccello

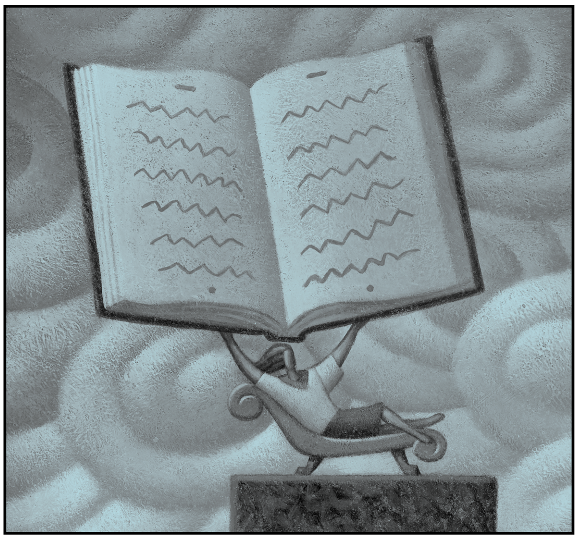
At a recent joint meeting of the SOA's Health Benefit Systems Practice Advancement Committee (HBSPAC) and the Academy's Health Practice Council (HPC), a discussion ensued regarding actuaries publishing articles in peer-reviewed journals. Because I have published papers in peer-reviewed journals and have also served as a peer reviewer for several journals, I was asked to share my thoughts on the subject.

A primary reason for publishing in peer-reviewed journals is that it gives an article and its author(s) an extra aura of credibility and respect. In addition, journals can provide a permanent record and, as such, can have a longer shelf life than articles disseminated through other means.

That said, many researchers, if not most, publish in peer-reviewed journals because it is part of the job—career advancement often hinges on a researcher's publication record. In addition, when awarding contracts and grants, government agencies and private foundations often use a researcher's publication record as one means of evaluating a proposal. This makes the long and arduous process of turning a research report into a journal article worth undertaking. Only a fraction of articles submitted to journals ultimately get accepted, and that can be after a year or more of revisions and resubmissions. Even after an article is accepted, it can be a year or more for the article to appear in print, as many journals have very long backlogs.

The publishing process

For most actuaries other than those working in academia or in other research organizations, publishing articles is probably not high on their priority list. Nevertheless, it is important and desirable for some actuaries to publish, so it's probably a good idea to understand the process. The first step toward getting a paper published is to find the most appropriate journal to submit it to.



Journals vary considerably with respect to their subject matter, the level of analytical rigor or theory required, whether the audience is multi-disciplinary or primarily of a particular discipline, the degree of public policy focus, and whether the journal includes mostly quantitative empirical papers or qualitative papers. Also, note that some journals publish a variety of different types of papers.

A good way to determine the most appropriate journal for a given paper is to look at an entire journal volume to see the types of papers it publishes. This approach is typically better than looking at only one or two papers, because those papers might not be representative. In addition, most journals provide information regarding their editorial policy and submission guidelines in the journals themselves and/or on the journal's Web site.

I've compiled a fairly comprehensive list of journals that might be appropriate for publishing the work of health actuaries (I'm sure there are others). These include:

- *Health Affairs*
- *Inquiry*
- *Milbank Quarterly*
- *Health Care Financing Review*
- *Health Services Research*
- *Journal of Risk and Insurance*
- *Journal of Human Resources*
- *Gerontologist*
- *Journals of Gerontology*
- *Demography*
- *Journal of Health Politics, Policy and Law*
- *Journal of Health Economics*
- *Medical Care*
- *Health Policy*
- *Journal of the American Statistical Association*
- *Journal of Policy Analysis and Management*
- *Health Policy and Planning*
- *American Journal of Public Health*
- *Journal of Health and Social Policy*
- *Industrial and Labor Relations Review*
- *Industrial Relations*
- *North American Actuarial Journal*

The keys to success

I've heard some express concern that journals are only interested in publishing work from those holding doctorate degrees. I don't think that is the case. There are several keys to a successful journal submission. The article should be on target for the particular journal, address a relevant issue or question, use appropriately rigorous methods and have conclusions that follow from the results and be well written. (Note that reviewers are not notified of a paper's author(s), so they do not know whether they have doctorate degrees or not. That said, some researchers have very good reputations and/or connections to a particular journal's editor, which can ease the path toward publication.)

Understanding how the article will be judged can be useful. Typical questions that a peer reviewer must address when evaluating a journal submission include:

- Is the manuscript substantively accurate?
- Does it contribute not just original information but also original and relevant ideas to the body of literature?
- Is the manuscript well organized and the presentation clear?
- Is the study design appropriate and the statistical analysis suitably rigorous?
- Is it timely?

Often, a manuscript will be returned with a recommendation to revise and resubmit according to the reviewers' suggestions and, at times, the required revisions can be quite extensive. It is important to be sure to address each reviewer's specific comments. When resubmitting the manuscript, it is helpful to enumerate each of the comments and actions taken to address the comment/suggestion. Note that the authors do not necessarily have to incorporate every one of the reviewers' suggestions; some suggestions are off target and others may require additional work that is beyond the scope of the paper. However, reasons should be given when not incorporating specific comments.

Other dissemination strategies

Publishing papers in journals is not the only way to get a paper in the public domain. Indeed, because it takes so long to get a paper published, other dissemination efforts can actually be more effective. In my experience, the papers that have received the most attention, both from researchers and the press, have been disseminated not as journal articles but through other means. Other research dissemination strategies actuaries may find worth exploring include:

Peer-reviewed papers

Several foundations publish papers produced from research that they fund (e.g., Kaiser Family Foundation (KFF), AARP, the Commonwealth Fund). Prior to publication, the foundations typically send the draft reports out to peer review and the authors make any necessary revisions. (This would be somewhat similar to the SOA's Project Oversight Group (POG) system.) Research organizations often have a formal discussion paper series, and these papers are typically peer reviewed.

Fact sheets/bottom lines

These are one- to two-page highly condensed pieces used to either summarize a paper's findings or highlight a few key facts or points.

Issue briefs

Issue briefs are typically written for a more general audience (including policymakers and the media), and can either summarize longer research reports or can be end-products themselves. Issue briefs that simply summarize longer reports for a more general audience typically do not go through a formal peer review process, although they would go through an internal review and editing. Issue briefs that present original work would be more likely to go through a more formal peer review process, although probably less so than full research reports. Many foundations and research organizations publish issue briefs (e.g., the Commonwealth Fund, Boston College Center for Retirement Research, the Urban Institute, the Heritage Foundation).

Working papers

Working papers are a quick way to put out reports. They are typically not peer reviewed, but researchers will often try to get their working papers published in peer-reviewed journals or in other venues.

Conference volumes

When conferences are held around a particular topic, edited volumes of the papers presented can be created. The papers could be peer reviewed or, if discussants are included in the conference, short write-ups of their comments could be included.

Publicly available data

Another way that the actuarial profession can increase its exposure and standing among the research and policy community is to make the data it collects available for outside use. Economists and policy researchers would probably be very interested in obtaining access to some of the data that the SOA and private firms collect. I realize that often data is considered proprietary, but perhaps there are opportunities for collaboration between actuaries/firms with data and other researchers.

One final note

I've noticed that although actuarial consulting firms often produce papers and research reports, they are not always available to the public and, when they are, they can sometimes be quite expensive to obtain. Making reports more accessible to the public will increase exposure. Of course, this needs to be balanced against a firm's need to recoup costs. In addition, I've noticed that some actuarial reports leave many details out, especially regarding the methods and assumptions used in the analysis. Not only is it important to disclose what assumptions were used, it is also important to include information on why those assumptions are appropriate. This type of information can help increase a paper's credibility and, therefore, increase its chances of being taken seriously and cited by others.

In the end, I think we should encourage wider dissemination of actuarial work and research with the goal of gaining increased recognition from other disciplines, the public, the media, and actuaries themselves. It is important, however, to develop a dissemination strategy that is most appropriate for the particular case in question.

Cori E. Uccello is senior health fellow at the American Academy of Actuaries. She can be reached at uccello@actuary.org.

Variable annuities

continued from page 5

options being shorter than the duration of the underlying liabilities.

Matching Rho should also be considered. Changes in interest rates affect both the income statement and the cost of required capital. Some of the funds involved are based on interest rates, but more importantly, actuarial pricing usually involves discounting at an interest rate plus a risk/profit component. If interest rates increase, the risk/profit component will be reduced and may even turn into a loss. Rho is typically hedged using interest rate futures. Hedging Rho will mitigate the exposure to interest rate risk resulting from these changes.

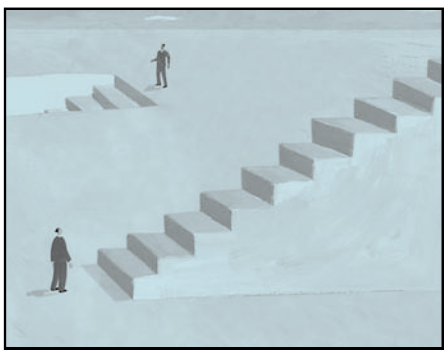
A recent informal Tillinghast industry survey of 20 large variable annuity writers indicated that only two companies were hedging dynamically beyond Delta, eight companies were Delta hedging, one company was using static hedging, and nine companies had no hedging program in place at all (see Exhibit 3). Going beyond Delta hedging is expected to increase the hedge effectiveness, but also increases the cost of the hedging program.

Modeling needs to be done continually to ensure that current conditions in the market do not create exposures to the market outside the risk tolerance limits established by the company. Trades are typically made daily, or every few days with positions left open. A good analytical model will help analyze the hedge effectiveness and cost, but also requires that the intricacies of hedge accounting and the new C3-Phase II requirements be incorporated into projections of future results.

Best practice companies have gone beyond Delta hedging, mitigating exposure to Rho and Vega as well. They are able to run their entire in-force on a daily basis, and compare the resulting liability Greeks to the Greeks in their hedge portfolio. While variances between the two portfolios are checked on a daily basis versus the company's risk tolerances and constraints, actual trades are typically made on a weekly basis to keep down the costs of hedging.

To facilitate the calculation of the Greeks, companies have developed a variety of ways to reduce run-time, including:

- Using a set of representative scenarios.
- Assigning only a subset of all scenarios to each model point by using a random number algorithm.
- Using distributed processing for computers, involving as many as 30 to 40 computers run overnight.

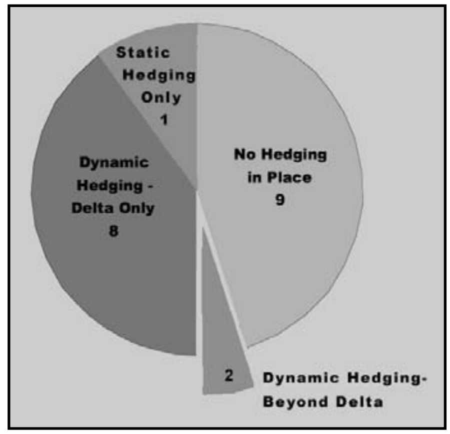


Next steps ...

The adoption of C-3 Phase II as proposed by Life Capital Adequacy Subcommittee (LCAS) of the American Academy of Actuaries is expected to provide a tangible reduction to required capital for hedging. Without hedging in place, required capital for living benefits is expected to increase up to six-fold from current levels according to analysis conducted by Tillinghast. Also, the risk management of GLBs is continuing to receive increased scrutiny from analysts and regulators.

We would expect that a near non-existent reinsurance market in this area will eventually attract new entrants. As an example, Lennox Re is a new company

Exhibit 3



Source: Tillinghast

formed to provide reinsurance solutions as outlined in this article. We believe companies will look to mitigate risks from variable annuity guarantees directly and through reinsurance on an expanded basis in 2004.

It was once felt that variable annuities were well matched for asset/liability purposes with the underlying mutual funds. Actuarial science has now moved on to further define the level of matching necessary to manage the optionality inherent in the guaranteed features of variable annuities. We expect that in the near future, there will be further advances in product design and risk management of these benefits. Companies striving to be among the best cannot afford to do this without having proper hedging procedures in place. This should provide a great opportunity for actuaries to rise to the challenge.

Phil Bieluch is chief operating officer at Lennox Re in Avon, Conn. He can be reached at phil@bieluch.com. *Hubert Mueller is a principal at the Tillinghast business of Towers Perrin in Weatogue, Conn. He can be reached at* Hubert.Mueller@towersperrin.com.

Bruce Nicholson honored as top actuary in fraternal benefit industry

Bruce J. Nicholson, MAAA, FSA, president and chief executive officer of Thrivent Financial for Lutherans, received the 2003 Jacobson-Rugland Award from the National Fraternal Congress of America (NFCA), the Association for America's Fraternal Benefit Societies.

The annual award was established by Luther College in Decorah, Iowa, and honors an outstanding fraternal actuary affiliated with the NFCA for contributions to the actuarial profession and for support of the fraternal benefit industry.

Do you know an SOA member who shines? Who goes above and beyond to advance or promote the actuarial profession? Who inspires others to "raise the bar" and give 120 percent? Here's your opportunity to give that person his or her day in the sun.

This year, we will be publishing special achievements of SOA members in a new feature called "Members in the spotlight." We're looking for information about people who:

- Advance or build the actuarial profession in a significant way.
- Demonstrate a high level of dedication and commitment to the actuarial profession.
- Inspire others to strive for excellence in the actuarial profession.
- Impact a large number of people in the actuarial profession.
- Impart knowledge or introduce new topics related to the actuarial profession.

"Members in the spotlight" is dedicated to highlighting the achievements of SOA members whose commitment and value to the profession have earned them special notoriety. Note that personal information such as job promotions, retirements, academic degrees or accreditations earned, weddings, births, etc. is not the focus of this new feature. Please keep that in mind when submitting accomplishments or successes about an SOA member you'd like to see highlighted.

Guidelines

All submissions should highlight successes about an SOA member and should be limited to two to three paragraphs. Every entry will be considered and will be edited as necessary—please note that submission of an entry does not guarantee publication. Photos will also be considered if space is available.

We're excited about this new feature in The Actuary and look forward to recognizing the special accomplishments of our members. Please send submissions for "Members in the spotlight" to Jacque Kirkwood at *jkirkwood@soa.org.*

Closer look at the IAA

continued from page 12

- IACA—the section for consulting actuaries.
- IAAHS—the newly formed health section, which was created with the strong encouragement and leadership of SOA Past President Howard Bolnick.
- The Pensions, Benefits and Social Security (PBSS) Section was formed in November 2003.

Are you an IAA member? Check it out!

All FSAs have an automatic base membership with the IAA. Make sure you have the free user ID for the IAA Web site—www.actuary.org. (Note: You may join the sections for a modest additional fee. Check the IAA Web site for details.) Your membership entitles you to access listservs, keep track of progress made by standard setting groups and get the latest IAA news. By tuning in to the IAA Web site, you're already volunteering your time and keeping up to date with the latest actuarial news from a global perspective.

For those who want to make a more serious commitment as a volunteer, serving on a committee may be the option that's right for you. Each member organization is allowed to nominate representatives. As turnover occurs, spaces become available on the various work groups. Committee volunteers spend a significant amount of time traveling the international circuit and participating in conference calls, sometimes in the wee hours of the morning to accommodate the various time zones of all involved. SOA delegates are approved by SOA's International Policy Committee. If you're interested in being a committee representative, please contact Martha Sikaras at msikaras@soa.org.

"In my years of international involvement, I've found that there is a significant amount of work being done in other countries that is relevant to my work back home," said SOA Past President Jim MacGinnitie. "And it's always interesting to see other ways of attacking similar problems."

ERM Symposium receives thumbs up from risk managers

by Valentina A. Isakina, SOA finance actuary

Building on the success of last year's first Enterprise Risk Management (ERM) Symposium, the Casualty Actuarial Society and Society of Actuaries have agreed to jointly sponsor a professional event focused on enterprise risk management issues again this April. This year, the symposium will feature new and more ambitious topics, joining together risk managers from a vast array of broader financial services enterprises.

The 2004 ERM Symposium is scheduled for April 26-27, 2004 and will be held at the Renaissance Chicago Hotel in downtown Chicago. Georgia State University's Thomas P. Bowles, Jr. is a co-sponsor of the symposium and involved in the program development. In addition, the Professional Risk Management International Association (PRMIA) is participating in the event as a co-sponsor and co-organizer to provide extra content on the non-traditional topics relating to the broader economy ERM issues.

The Organizing Committee of the first ERM Symposium (July 2003) has received a tremendous show of support from the participants of last year's event with requests to continue this joint, groundbreaking initiative going forward. Understanding the risk management issues in a broader enterprise context is among the top cores skills required for success in the business environment. These skills demand integration of many aspects of business and risk management knowledge and are currently among the most sought after skills in the marketplace.

To explore this broader context further, the second ERM Symposium will build on the success of the first event through the participation of the strategically-focused Bowles Symposium and the involvement of PRMIA with regard to program development.

The symposium provides an ideal learning opportunity for those interested in information about emerging risk management trends and practices both within the financial services industries and beyond. In addition, the event will provide a unique networking potential to meet individuals practicing in this emerging field in various industries outside the insurance arena. General and concurrent sessions will provide property/casualty, life, health, as well as broader financial services industry perspectives on various topics.

A complete program of the ERM Symposium is available on the SOA Web site *(http://www.soa.org/conted/ac.html)* and the CAS Web site *(http://www.casact.org/coneduc/04erm.htm)*.

Please come and join us in Chicago for an unforgettable event!

Deadline extended for Pedoe Prize

The deadline for eligibility for the first award of the Arthur Pedoe Life Insurance Company Expense Study Award has been extended to June 30, 2005. To be eligible for the $5,000 award, which will be presented in late 2005, a paper must have been published between July 1, 2001 and June 30, 2005.

The purpose of the award is to increase awareness of the importance of expense analysis among actuaries and company management, by encouraging informative, high-caliber research and papers on the subject. To be considered, a paper must be based on sound actuarial and accounting principles and should be of such caliber as to advance the state of the art of expense analysis and related insurance company financial information. Papers must have been published in a suitable actuarial publication or written by an actuary and published in a non-actuarial publication. Members of the SoA's Committee on Life Insurance Company Expenses (CLICE) will judge entries in conjunction with the editors of the North American Actuarial Journal. The CLICE reserves the right to not make an award in any period in which it does not consider any paper worthy of the award.

The Society of Actuaries and its Committee on Life Insurance Company Expenses instituted the award in 2001. The award is named for Arthur Pedoe, an actuary who was well known for his studies of life insurance company expenses. Pedoe was a Fellow of the Institute of Actuaries, the Actuarial Society of America, the Canadian Institute of Actuaries and the Society of Actuaries, where he held the office of vice president in 1958-59. He spoke frequently at Society meetings on trends in expenses and on the importance of controlling increases in expenses. For this purpose, he developed methods of calculating expected expenses to be compared with actual expenses. These methods were still in general use at the time of his death in 1979.

If you would like to submit a paper for consideration, please contact Steven Siegel, SOA research actuary, at 847.706.3578 or *ssiegel@soa.org*.

researchcorner

Life Insurance

Living to 100...

A contract has been signed with Drs. Leonid Gavrilov and Natalia Gavrilova of the Center on Aging of the University of Chicago to complete the project "Living to 100 and Beyond: Search for Predictors of Exceptional Human Longevity." This research is being jointly sponsored by the Committee on Life Insurance Research and the Committee on Knowledge Extension Research and will develop a family linked database of American centenarians to examine and identify predictors of exceptional human longevity and analyze the interplay between them.

Retirement

Managing Retirement Assets Symposium

LIMRA International, LOMA and the Society of Actuaries in cooperation with numerous other organizations are hosting the Management Retirement Assets Symposium to be held concurrently with the LIMRA Annuity and Pension Conference on March 31-April 2, 2004 in Las Vegas, Nevada. Papers will be presented on aspects of managing assets in retirement, including annuitization and associated risks. This event provides an opportunity for actuaries and retirement professionals to learn more about this topic and as a source of information for those conducting research in this area. The symposium is an ideal networking event as well. Those interested in attending should visit the conference Web site at and *www.loma.org/annuity.asp* and *www.loma.org/pension.asp*.

actuarialfoundationcorner

Actuarial mentors needed for Advancing Student Achievement programs in six major cities

The Actuarial Foundation is actively seeking actuarial volunteer-mentors for ongoing school programs in Phoenix, AZ, Houston, TX, St. Louis, MO, Chicago IL, Newark, NJ and St. Paul, MN.

By opening a child's mind to new ideas, you can create the kind of excitement that really inspires a student to learn, understand and achieve. That's the key to preparing a student for tomorrow's possibilities.

The Foundation's Advancing Student Achievement program brings actuaries and educators together in voluntary partnerships to enhance student mathematics achievement. This program combines actuaries' expertise in math with a sense of community spirit, creating a vehicle to work as volunteer math-mentors in public and private schools. When business professionals and educators work together in voluntary partnerships that increase student achievement in math, everybody wins. More information can be found at: *http://www.actuarialfoundation.org/grant/index.html*.

You can reach us at 847.706.3535, or via e-mail at *asa@actfnd.org*. Please consider mentoring a student today and make a difference in his or her future.

THE ACTUARIAL FOUNDATION

The Actuarial Foundation is a 501(c)(3) organization established in 1994 to help facilitate and broaden the actuarial profession's contribution to society. The Foundation's youth education initiative, Advancing Student Achievement, is one of our most successful initiatives serving our mission.

• Phoenix, AZ • Houston, TX • St. Louis, MO • Chicago, IL • Newark, NJ • St. Paul, MN