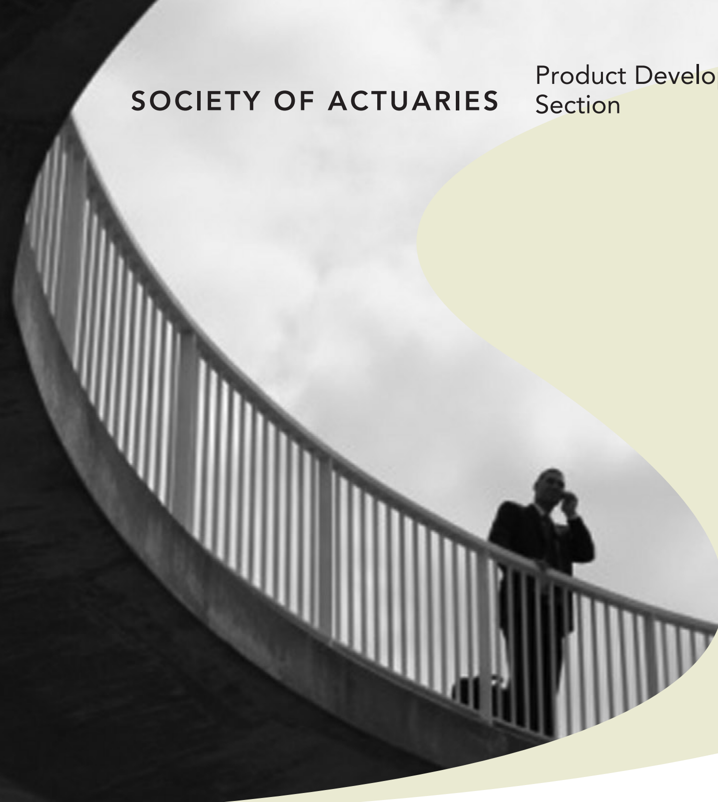
SOCIETY OF ACTUARIES Product Development Section



Product Matters!

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Product Development Section Election Results

Election results bring exciting news of new members that are eager to jump in and contribute. At the same time, it's sad to say good-bye to the retiring members who have willingly volunteered their time over the last year to help in the success of this section. Please join us in saying thanks and good-bye to retiring members Dale Hall (outgoing Chair), Christine Dugan and Steve Largent.

Looking forward, the new members joining the Product Development Section Council are Christie Goodrich, Chris Daniels and Paul Pflieger. The remainder of this article tells you more about each of your new council members. Please don't hesitate to get to know them.

Christie Goodrich joined Aviva Life and Annuity Company in August 2007 in the role of vice president — Life Product Management. In her role, Christie leads the product development and pricing of a variety of universal life and term products. Christie is also responsible for the interest rate setting of both indexed life and traditional life products and manages Aviva's closed blocks of business. Prior to joining Aviva, Christie held a variety of roles in the product development and pricing of life insurance and annuity products at Principal Financial Group, ING and Mutual of Omaha. Christie graduated from the University of Nebraska - Lincoln in 1995 with a Bachelor of Science degree in Actuarial Science and Mathematics/Statistics. She became a fellow of the Society of Actuaries (SOA) in 2005. Christie looks forward to serving on the Product Development Section of the SOA.

Chris Daniels is vice president of Life Product Development & Pricing at Farm Bureau Life Insurance Company (FBL), West Des Moines, Iowa. Chris joined FBL in 1985 and is

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Product Matters!

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Christopher Daniels, Council Member
Christie Goodrich, Council Member
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Articles Needed for the Next Issue of *Product Matters!*

Please email your articles to Ken Joyce or Dom Lebel by March 31.

Chairperson's Corner

by Robert Stone

I'm very pleased to be serving a term as chairperson of the Product Development Section Council. As a first order of business, I'd like to heartily thank our outgoing chairperson, Dale Hall, for his tremendous leadership and service during his tenure on the council and as the 2007-08 chairperson. We wish him well in his time on the Society of Actuaries' Board of Governors.

Robert P. Stone, FSA, MAAA, is a consulting actuary with Milliman Inc., Indianapolis, IN. He can be reached at rob.stone@ milliman.com.

Second, we would like to welcome Chris Daniels, Christy Goodrich and Paul Pflieger to the section council. They will be serving three-year terms following their elections to the council this past summer.

This is a large, proud section of over 4,000 members, among the most membership-rich sections in the SOA. With that constituency, however, comes challenge in meeting the needs of those being served. That's where you can help: by communicating ways in which the section can best provide service.

What can you expect this year? As in past years, the section council will strive to participate in research projects that are vital to product development actuaries and to produce newsletter content of interest to our members. The section council will coordinate and plan educational offerings via the Product Development Symposium and at the Spring Meeting and Annual Meeting. There are also plans to offer additional educational initiatives via the Web.

These endeavors, however, cannot stem solely from the energy and ideas of the section council. We need input from you, the section members. This input can take the form of ideas for sessions at society meetings or the Product Development Symposium. It can take the form of subject matter for actuarial research. It can take the form of suggested topical matter for articles in this newsletter, or authoring of such work. It can take the form of active volunteering for section council activities and for liaison roles, such as with the Committee for Life Insurance Research. There is no shortage of opportunities for active participation in our section.

The 2008-09 section year is already off to a great start. At the time this note is being written, your section council is actively planning for its role in the spring 2009 meeting in Denver and the 2009 Product Development Symposium in Los Angeles. By the time you read this newsletter, planning for the May newsletter will be nearly complete, and coordination of the 2009 annual meeting will be well underway. Several research projects sponsored in part by the Product Development Section are in process, including topics keyed on principle-based reserves and the market for retirement products.

But all of this is the old news; they are activities begun in the past and continued because they have been deemed worthwhile. What's needed today is input and feedback on the issues and needs facing product development actuaries in the current environment. It's clear that what's worked in the past will be continued going forward. What's less clear is the input that will be required to provide change or to expand the section's horizons.

That input only comes from you. Please feel free to provide it to me at rob.stone@milliman.com or to other section council members.

Thank you for allowing me to serve as your section chairperson. I look forward to a great year. ◻

Christie Goodrich

Chris Daniels

Paul Pflieger

currently a member of their management team. Since 1994, Chris has managed the Product Development & Pricing department and he has worked with a full range of individual life and annuity products, both variable and non-variable. Chris has been involved in all aspects of state filing compliance, competitive research, design of products and policy forms, design of agent compensation programs, pricing assumptions and models, and reinsurance. During his time at FBL, Chris has been the illustration actuary from 1997-2007, and he has been a member of the following company committees: Asset/Liability Management, Market Conduct, Capital Adequacy, Variable Product Subaccount Due Diligence, Product Management. Chris graduated with an Actuarial Science degree from Drake University in 1983, became a fellow of the Society of Actuaries in 1989 and a member of the Academy of Actuaries in 1990.

Paul O. Pflieger is director, Expense Analysis at Thrivent Financial for Lutherans located in Minneapolis, Minn. Paul has more than 15 years of experience in product development leadership roles related to annuity product development, pricing and general product management. During this time, he led the development of a wide variety of products, including fixed and variable deferred annuities, fixed and variable immediate annuities, inflation-adjusted immediate annuities, equity-indexed annuities and VA guaranteed living and death benefits. He has also led life product and LTC product development efforts. In addition, he has led cash flow testing and valuation functions for life, annuity and health products. Paul became a fellow of the SOA in 1994 and a member of the Academy of Actuaries in 1990. He has served on a variety of industry and SOA committees including the LOMA Product Development Management Committee (2002 – 2008), the ACLI Annuities Committee (2001 – 2008) and the SOA Annual Program Committee (2006 Chair, 2005 Vice Chair). ◻

Better, Stronger, Faster—Life Insurers Confront Product Development

by Elaine Tumicki

With new life insurance products and features coming out at a break-neck pace over the last several years, life insurers may have felt like they were on a treadmill, with the speed slowly but steadily increasing. The growing reliance on independent distribution requires companies to stay ahead of —or at least keep up with—their competitors if they want to stay on the shelf. Improving speed-to-market has become a key component of life company strategy.

What have companies been doing to address this ever-increasing challenge? LIMRA conducted a study to find out. On average, companies introduced three new products, revised three products, and changed the rates on two in the year leading up to the study. That's eight product development efforts of varying complexity underway over the course of a single year. And several companies had more than double that number. Term products on average have a shelf life of 2.2 years, with some companies reporting a shelf life as short as six months. Universal life is not that much longer, at 2.8 years. Given the ever shorter shelf life for products, it's not surprising that companies are searching for more effective ways to deliver new products to market.

How often do companies evaluate their product portfolio? On average, it is every eight months. The most common interval is annually, with a third of participants reviewing their portfolio once a year. A quarter of participants essentially have a continuous review process, examining their portfolios monthly.

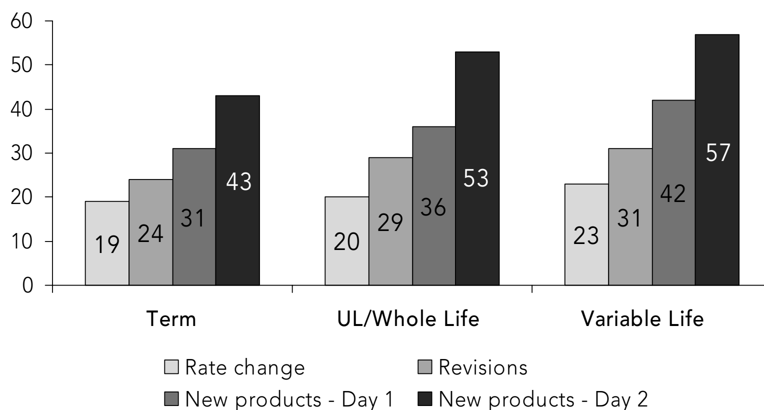
Companies consider many factors in designing new products. Some have more weight than others. What are the top factors companies consider? Profitability is at the top of the list, followed by competition and marketability. And companies turn to many sources for ideas. While the product development department itself is the primary source, following close behind are competition units and internal wholesalers/sales departments. The field also plays a role, both formally and informally, with agents considered an important source at about half of participating companies. Most companies evaluate the risks associated with new products. While this exercise is part of the product pricing process, in most companies corporate oversight also plays a role in evaluating risk.

Developing a new product takes time. The more complex the product, the more time it takes. For term insurance, a new product takes an average of seven months from idea to launch. And that just includes Day 1 systems functionality (Day 1 is what a company needs to have in place before the product is released). Add Day 2 functionality and you add another three months to the process. And that's for term insurance. A new variable life product takes nearly 10 months from idea to launch. Add Day 2 and it's more than a year. (See Figure 1.)

Product Development Process Length

(average number of weeks)

FIGURE 1



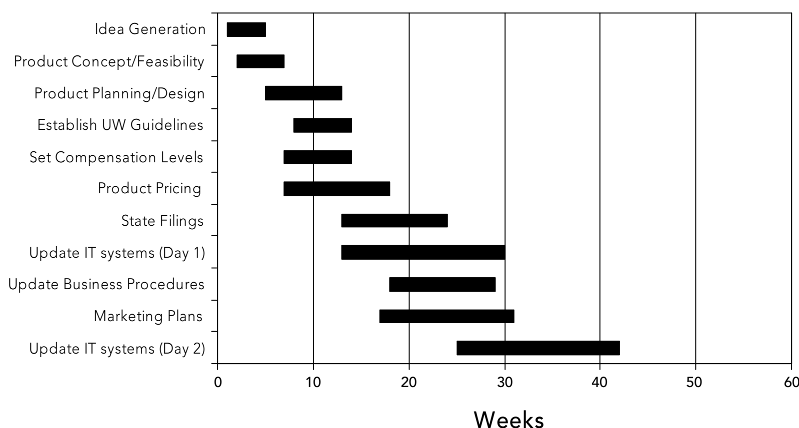
Source: LIMRA, *Individual Life Product Development Process*

The study also documented all the various steps in the process, when each step typically starts and how long it lasts. Updating IT systems takes the longest, followed by developing marketing plans and materials and product pricing. (See Figure 2 on pg. 6.)

CONTINUED ON **PAGE 6**

Term—New Product
Average elapsed and chronological time

FIGURE 2



Source: LIMRA, *Individual Life Product Development Process*

These time frames include state filings, but not approvals. That adds still more time to the process. For companies selling in all or nearly all states, getting approval for a new product can add seven months to the process. Of course, companies don't have to wait for approvals in all states to launch a product. Companies typically will launch when they have 33 state approvals. Most companies have key states they really want to have before launch. The top three are California, Texas and Florida.

Despite all the challenges, the product development process goes according to plan half of the time. Companies reported major deviations from plan just under a quarter of the time. When there are deviations, what's the cause? The most common is design/pricing issues, cited by nine in 10 companies. IT issues and changing organizational priorities were noted by about two thirds of companies.

But going according to plan isn't enough if the plan isn't achieving desired results. Nearly all the companies in the study had implemented new approaches to the product development process within the past year. The most common change was to have a more formal process, with better planning up front including all the key stakeholders, more controls and sign-offs along the way, quicker identification of problems and ultimately fewer surprises. New technology is also playing a role—a number of companies have introduced automated testing tools to speed up the process.

It's too soon to tell whether these efforts will result in better products, delivered faster. But now that we have a baseline, we can check back in a year or two to see if these new approaches have achieved their desired results. Stay tuned. ◻

Elaine Tumicki is corporate vice president, Product Research LIMRA International, Windsor, Conn. She can be contacted at etumicki@limra.com.

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Spring Meeting Preview:
Denver, May 2009

by Tom Phillips

Tom Phillips, FSA, MAAA, is a senior actuary with Principal Financial Group. He can be contacted at phillips.tom@principal.com.

Please reserve time in your May calendars to attend the 2009 Life Spring Meeting in Denver, Colo. Your section council members are working on a program of sessions that should be informative about the annuity and life insurance product development environment and should improve your product development skills.

The Life Spring Meeting will include several sessions focusing on changes within the life insurance industry related to recent developments (or, some might say, crises) in the U.S. and global financial markets. Speakers from both inside and outside the industry will address recent topics from the emerging financial world. The Product Development Section will contribute sessions that help product development actuaries provide sound advice in developing products in the changing world.

The Product Development Section has sessions planned to give product development actuaries perspective on product changes, regulatory changes, and how the public perceives our products. In addition, there will be presentations on hedging challenges and the changed environment for capital markets solutions and securitizations.

Also, there will be updates on life and annuity product design, underwriting and annuity mortality.

As usual, the section will be sponsoring our section breakfast where you can meet and greet your fellow product development actuaries.

This should be an exciting and informative meeting. The council hopes you can attend and looks forward to seeing you there. ◻

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Summary of the September 2008 NAIC Meeting

by Donna R. Claire

Donna R. Claire, FSA, MAAA, is president of Claire Thinking, Inc. in Fort Salonga, NY. She can be reached at clairethinking@cs.com.

The September NAIC meeting was in Washington (sort of—it was really in Oxon Hill, Maryland, a planned community that will probably be very nice when they finish it in a year or two.) As with the past meeting, the Life and Health Actuarial Task Force of the NAIC is devoting just about all its time to the principle-based approach (PBA) project. There were also a few important non-PBA topics that were discussed. A summary of the LHATF meeting and some subsequent conference calls as well as highlights from a few other meetings is given below:

VACARVM Passed: The new reserving standard for variable annuities has passed all needed levels of the NAIC, and will become effective as of 12/31/09. It is an actuarial guideline, so it will be effective in virtually all states at that time.

Group Waiver of Premium: LHATF adopted the Actuarial Guideline on Group Waiver of Premium, with a 1/01/09 effective date. This work replaces the Krieger table.

GRET: LHATF voted to accept the new GRET factors as developed by the Society of Actuaries. These Generally Recognized Expense Tables can be used as expense factors by illustration actuaries. Many of the factors are higher than the 2008 factors, so illustration actuaries should review these numbers if they are using GRET instead of their own companies' expenses.

> "The new reserving standard for variable annuities has passed all needed levels of the NAIC. …"

Nonforfeiture for Deposit Term Contracts: LHATF passed Actuarial Guideline CCC, The Application of the Standard Nonforfeiture Law for Life Insurance to Certain Policies Having Intermediate Cash Benefits. This requirement will become effective 1/01/10 for all contracts.

SVL2 Exposed for Comments: The major agenda item for LHATF in September and on two subsequent telephone calls was to go through the remaining amendment proposal forms and develop a document that represents the expected final changes to LHATF. This document is being exposed for comment until the December LHATF meeting.

Valuation Manual: There were brief updates on some of the valuation manual changes at the September LHATF meeting, and a number of additional conference calls on the various sections of the Manual. The Manual is expected to be the major topic of conversation at the December LHATF meeting.

Preferred Mortality: The joint SOA/AAA Project Oversight Group gave a presentation on margins that can be used with potential new mortality tables at the September LHATF meeting, and there was an additional conference call on this topic in November. The group recommends varying the margin by duration, which would be different than what was done for prior CSO tables.

Nonforfeiture Developments: The Academy's Nonforfeiture Group gave an update on the project to update the standard nonforfeiture law at the September LHATF meeting. They expect to have the majority of their work completed in the next six months or so.

International Developments: LHATF heard a short presentation in September on developments in international accounting and solvency issues, and will hear a lengthier presentation on the same at the December meeting. The PBA project is going in the same direction as international in terms of requiring a look at all material risks and reflecting cash flows. There may be some differences that develop. LHATF will be following the discussions to see whether they should try to influence some of the international direction or whether they would eventually need to revise some of the U.S. requirements. Note that one difference currently is that international accounting looks like it is headed toward market values, which

is a bit controversial in light of the contribution of market value disclosures made to the volatility of the markets in the last few months.

SUMMARY

We live in interesting times. I believe that PBA will provide better protection than the current system of reserving and capital because all material risks will need to be considered and disclosed. With this goal in mind, there is a tremendous amount of work by the professional organizations, regulators and industry to develop a principle-based approach that will identify and measure risks on a reasonable basis. ◻

2009 Ninth Annual Product Development Actuary Symposium

Springtime is coming (think positively) and once again we will be co-sponsoring the Ninth Annual Product Development Symposium (PDS) with the Tax, Marketing and Distribution, and Reinsurance Sections.

The meeting will take place on June 29-30, 2009 at the Hyatt Century Plaza in Los Angeles, Calif. The planning committee has constructed a strong program, including plans for a general session on the state of the industry from Wall Street analysts and a general day-one luncheon discussion on the product life cycle from the consumer products division perspective.

CONCURRENT SESSIONS AT THE PDS WILL INCLUDE SESSIONS SUCH AS:

- Regulatory and tax
- Variable, fixed, and income annuity products
- Term insurance, permanent life, and conversion topics
- Mortality, underwriting and reinsurance
- Illustration actuary issues
- Pricing: setting assumptions, product life cycle, ERM, and profit measures

POST-SYMPOSIUM OPTIONAL ACTIVITIES INCLUDE:

- a group dinner on the evening of June 29
- a full day seminar: Profit Measure Bootcamp—potential topics include Stat, GAAP, Embedded Value, Market Consistent, etc.

Preceding the PDS will be the Fourth annual PDS Golf Outing, teeing off early on the afternoon of June 28. Golfers of all skill levels are welcome to play.

Watch for the entertainment-related session themes (e.g., "Law & Order"). The complete agenda, including activities, will be available in March on the SOA Web site *www.soa.org.*

Society of Actuaries

Life 2009 SPRING MEETING

May 18-19, 2009
Denver Marriott City Center
Denver, CO

Join us in May for the 2009 Life Spring Meeting featuring:

- unique, informative sessions on diverse topics;
- keynote speakers, Todd Buchholz, a former director of economic policy at the White House; and Jim Cathcart, CSP, CPAE, author, professional speaker and business leader; and
- networking opportunities to meet and learn from industry experts.

Immediately following the Life Spring Meeting, the Academy's Life Practice Council and the Society of Actuaries will present a day-and-a-half-long seminar on VACARVM. Concurrently, the Society of Actuaries' Management & Personal Development, Financial Reporting and Product Development Sections will present the Business School for Actuaries Seminar, a day-long seminar exploring ways to manage conflict and change within your organization.

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A Note Regarding **"Risk Neutral"** and **"Real World"** Scenarios—Dispelling a Common Misperception

by Gary Hatfield

Circa 2000

A typical conversation between a veteran actuary and a youngster taking the investment track exams might have gone like this:

Vet: Explain to me again these "risk-neutral" scenarios.

Youngster: Well, they're just like regular scenarios, except that stocks only get the risk-free rate.

Vet: That makes no sense, everyone knows that stocks outperform bonds given enough time.

Youngster: Yes, but since you discount everything at the risk-free rate, it all works out.

Vet: But it's not realistic.

Youngster: It's not meant to be. It's just a trick to get the correct price. *The scenarios don't mean anything individually*—only on average.

Vet: OK, I understand that using these scenarios correctly prices options, but it still doesn't feel right. The idea that stocks don't outperform bonds bugs me.

Youngster: Well, just remember that the scenarios *aren't supposed to be realistic*; it's the valuation that matters.

The youngster almost has it right—but not quite …

Fast forward to 2008

We have made a lot of progress. Today, I would say that the majority of actuaries who have had to deal with either market consistent embedded value (MCEV) or FAS133-valued variable annuity guaranteed living benefits (VAGLBs) have had to grapple with risk neutral scenarios and have gotten themselves to an understanding at least as good as Youngster's (who is not so young anymore). Let me characterize Youngster's understanding (which I believe is fairly common among actuaries young and old):

Risk neutral pricing is just a mathematical trick to recover the price of options using Monte Carlo simulation. The scenarios are not real world; they just get us to the correct price.

This understanding is mostly accurate, but is significantly flawed. This note is an attempt to address the subtle but important misconception embodied above. I should add that I think it is a great sign of progress that the above misconception seems worthy of addressing.

Individually, all the scenarios in a set of risk neutral scenarios are real world. Each scenario is just one path among many possible paths in the future. Each path is either possible or impossible. If it is possible, it may be part of a risk neutral scenario set and it may be part of a real world scenario set. If the path is impossible, it can be part of neither a risk neutral nor a real world scenario set. The difference between risk neutral scenarios and real world scenarios is **not** the individual scenarios themselves; it is the **probability** of those scenarios occurring.

Recall that the whole point of risk neutral pricing is to recover the price of traded options in a way that avoids arbitrage. As such, the probabilities of various paths are implied from the prices of various traded securities whose payoffs depend on those paths. Since investors are in aggregate risk averse, these prices imply higher probabilities to bad scenarios than they do to good scenarios. Hence, while everyone (almost!) agrees that stocks have a higher expected return than risk free bonds, the prices of stock and stock options imply the only difference between stocks and risk free bonds is that stocks are more volatile. Put another way, a risk neutral scenario set has many more really bad scenarios than a real world scenario set precisely because investors fear these scenarios. They therefore overweigh their probability when deciding how much a security is worth.

Implication

There is an important implication that has relevance for actuaries struggling with the MCEV concept. *Our models need to reflect real world behavior within a given scenario.* That does not mean that we create some kind of parallel universe companion scenarios from which we derive policyholder and management behavior. Rather, the models should be based on the assumption that, should the economic scenarios actually transpire (how-

Gary Hatfield, Ph.D., FSA, MAAA, CFA, is investment actuary, Securian Financial Group. He can be contacted at gary.hatfield@securian.com

ever unlikely), the modeled cash flows are a best estimate of policyholder and management behavior.

> "Individually, all the scenarios in a set of risk neutral scenarios are real world."

If we are modeling a product with management determined interest crediting, then there is an important question: do we share credit losses with the policyholders? If the answer is no, then our model should show that the crediting rate depends on corporate bond yields, but not on bond total returns. That is to say, the model should assume that that crediting will depend on the credit risk premium that we are hoping to make. This means that, if corporate bond spreads are high, our products look more expensive. If they are low, our products look cheaper. Put another way, if we are issuing free credit default swaps to our policyholders, our MCEV models need to reflect that. On the other hand, if we allocate all default losses back to policyholders, then it is appropriate to reference crediting to the total return, and the expected risk premium is irrelevant.

How does this look in practice? In the former case, we could model the crediting as Risk Free Rate + Bond Spread – Targeted Earnings Spread. In the latter, it would make more sense to model the crediting as Risk Free Rate – Targeted Earnings Spread. This is a huge difference for many products.

At the same time, we must make an assumption of how our competitors will credit. If we decide to not issue free credit default swaps to policyholder, that won't necessarily prevent the competition from doing so. Our models need to reflect this.

Finally, a risk neutral scenario set will likely have many scenarios with rather extreme behavior. Interest rates may be very high or very low, or equity returns may be negative over a long horizon. We need to be sure that the modeled dynamic behavior (policyholder, management or competition) is real world within those scenarios. For example, if the normal crediting policy is to stay within 200 basis points of current rates; would that still hold true when current rates are over 20 percent?

Summary

When it comes to understanding risk neutral pricing, we've come a long way, but there remain some subtle misperceptions. I have attempted to address one of them here. It is the notion that the scenarios themselves are not real world. In fact, all of the scenarios in a risk neutral scenario set are real world. This point implies that our models need to reflect what we think would really happen, given a specific scenario. ◻

AG VACARVM/AG 43 Seminar

May 19-20, 2009
Denver Marriott City Center
Denver, CO

Co-sponsored by the Society of Actuaries and the American Academy of Actuaries, this day-and-a-half-long seminar on VACARVM and AG 43 will provide an in–depth discussion of several "hot topics" and specific implementation challenges related to the proposed Principle–Based Approach (PBA) for variable annuity products.

The seminar will also focus on technical aspects of implementation and a review of the updated Variable Annuity Practice Note, set to be released in spring 2009.

Learn more at **www.soa.org**

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