



# Product Matters!

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## Chairperson's Corner

by Jeffrey A. Beckley

It is my privilege to serve as the chair of the Product Development Section for the next year. Serving on the section council is an honor. It is also rewarding to work with the other council members and the SOA staff.

I must start by thanking our four retiring council members. Elinor Friedman has been the chair of the section council for the last year. While Elinor is leaving the council, she will continue to serve the Product Development Section as the Chair of the Planning Committee for the Product Development Symposium. The symposium continues to grow in popularity and we look forward to presenting another great symposium this year in Denver.

Also leaving the council this year are Mary Broesch, Nancy Winings and Kent Scheiwe. Each made valuable contributions to the section and deserve our sincere thanks for all that they did. Without our volunteers, the sections would not be successful.

New section council members this year are Cathy Bierschbach, James Christou, Steve Largent and Rob Stone. They bring new energy and ideas to the Council. I would also like to welcome back returning council members Dale Hall (vice chair), Mike Kaster (secretary/treasurer), Christine Dugan and Doug Robbins.

Our section is one of the most successful Sections. For example, we have over 3,900 members, we provide the membership with many services and we sponsor significant research and continuing education programs. As a result of this success, we have built up a significant capital balance of \$360,000. Our capital balance is not the result of the dues that you pay to join the section. As a matter of fact, our dues are \$15 and the SOA charges the section a total of \$10 per member for the



*Members of the Product Development Section meet in a breakout session at the Annual Meeting held in Chicago.*

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administrative services provided by the SOA. The capital balance is primarily the result of extremely successful continuing education programs such as the Product Development Symposium, the accompanying seminar and webcasts. These events have generated profits over the years.

Over the last six months, the section council has discussed the appropriate level of capital funds for our section. We have made a strategic decision to reduce our capital balance to a more reasonable level which we have pegged at \$140,000. We have established a timeframe of three years to achieve this goal. We intend to reduce the balance by providing services to the members of the section. We have always had a goal to spend 25 percent of our dues on research. For the next two years, we intend to double the spending on research assuming we can identify research that will be of value to the members. Secondly, we intend to reduce the fees for continuing education events in an effort to eliminate the current profit typically generated by these events. Furthermore, we are very interested in any other ideas that you as members might have for services that the section could provide. Please feel free to e-mail me at my address below with any ideas.

The planning for many of our activities for the next year is already underway. The 2007 SOA Spring Meeting is May 10 and 11 in Phoenix. Christine Dugan and Steve Largent are our representatives on the planning committee. The Spring Meeting will again feature embedded seminars. We will sponsor two seminars: "Retirement Products—How the Insurance Industry is Addressing Solutions to Longevity Risk" and "Indexed Universal Life."

As mentioned above, the 7th Annual Product Development Seminar will be in Denver this year. The tentative dates of



*Jeff Beckley looks on as he watches former chairperson, Elinor Friedman, open her gift from the Product Development Section.*

the seminar are June 25 and 26. Doug Robbins is leading the efforts to create a symposium following the seminar.

The planning for the Annual Meeting has also started. James Christou and Cathy Bierschbach are representing the section on the Planning Committee.

These activities require a considerable effort from volunteers. They also provide a wide variety of opportunities for members to get involved—please contact any council member or me if you are interested in volunteering. We will be happy to discuss the many benefits of volunteering and help you match your skills and interests to the projects. □



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# Product Development Section Election Results

by Kenneth E. Joyce and Dominique Lebel

**E**lection results bring exciting news of new members who 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 Elinor Friedman (outgoing chair), Mary Broesch, Kent Scheiwe and Nancy Winings.

Looking forward, the new members joining the Product Development Section Council are Cathy Bierschbach, James Christou, Steve Largent and Rob Stone. The remainder of this article tells you more about each of your new council members—it's important that you get to know them.



*Kenneth E. Joyce, FSA, MAAA, is a consulting actuary with Milliman, Inc. in Wakefield, Mass. He can be reached at [ken.joyce@milliman.com](mailto:ken.joyce@milliman.com).*



**Catherine Bierschbach** is a second vice president at Transamerica, located in Los Angeles, Calif. Cathy has held a variety of traditional and nontraditional actuarial

positions both in the United States and internationally. These roles have provided her with extensive experience in management, product development (including implementation), financial reporting, modeling and troubleshooting complex problems. In her current position, Cathy has responsibility for pricing both term and UL with secondary guarantees.



**James Christou** is a consultant at Valani Consulting in Toronto, Canada. Having worked at two major life insurance companies, a leading brokerage firm and as a consultant since entering the life insurance industry in 1991, James has acquired an extensive and varied background in the life insurance industry. His experience at the two life companies has allowed him to gain extensive technical expertise and valuable management capabilities. At the brokerage firm, his focus was on advanced marketing

concepts in the high individual net worth marketplace. Most recently, he has provided consulting services in Canada, the Caribbean, Asia and the United States that have included product development and pricing, ALM, DataLink applications and international reinsurance pricing.



**Steve Largent** currently has responsibility for life and annuity product development at Consec Inc. Steve has more than 30 years of experience in the life insurance industry. He worked for ING for 19 years, including 17 years with ING-Security Life, where he headed up new product development and marketing. He spent two years in The Hague as regional coordinator for United Kingdom-Australia. Steve also served as president of First Variable Life in Boston and developed a consulting practice for private placement and offshore life insurance.



**Rob Stone** is a consultant in the Indianapolis office of Milliman. Rob has extensive life and annuity product development experience, specifically focusing on indexed and variable products. Other project work includes asset/liability management, tax issues, financial projections and appraisals. He is a frequent speaker and moderator at insurance industry meetings and he has written many articles for *National Underwriter* and other insurance trade publications. □



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# NAIC Autumn and Winter 2006: Principles-Based Approaches Take Front and Center

by Donna R. Claire



The major topic of the Life and Health Actuarial Task Force (LHATF) of the NAIC at the September and December 2006 meetings continued to be Principles-Based Approaches (PBA) to reserves and capital. LHATF spent much of their two-day meetings hearing about, debating, making decisions, accepting certain reports and exposing for comment various PBA regulations. Some of the highlights include:

### LRWG

Dave Neve and Tom Kalmbach, co-chairs of the American Academy of Actuaries' LRWG, gave updates on the Life Reserve Work Group work. They have provided revised proposed regulation and actuarial guide-

lines. The LHATF voted to expose these drafts. Dave stated that there were a few issues still outstanding, but they expected to finish the work in early 2007. These documents will be available on the Academy Web site, [www.actuary.org](http://www.actuary.org).

*Note: on a related issue, there was a straw poll taken after an Academy webcast on this subject. One of the questions was: in your opinion, how prepared is your company for implementation of the LRWG proposals? Of those people that answered, 7 percent stated they were very prepared, 36 percent were somewhat prepared, 40 percent were a little prepared, and 16 percent were not at all prepared. These percentages are somewhat higher than the results of a similar poll taken three months ago. I would note that those that are very prepared may have a leg up when PBA is implemented.*

### SVL2 Law

Larry Bruning gave an update on his SVL work group of LHATF. They have exposed a draft law, which may be voted for adoption at the March 2007 meeting. Note that Larry Bruning also heads up an Academy team working on a centralized review concept. There is also an Academy team headed by Mike Boerner, working on the valuation law and manual. The manual is expected to contain the regulations needed to support PBA. Mike expects to have a draft of the manual available by the March 2007 LHATF meeting.

### PBA Reviewer Regulation

Shirley Shao has given a presentation on the results of this Academy group. A PBA reviewer is expected to be hired by the company to review the methodology and assumptions used by a PBA actuary. A regulation that Shirley's group worked on was

exposed for comment by LHATF. This document is available on the Academy Web site.

### Other SVL2/PBA Projects

The Academy's PBA/SVL2 groups gave an update on a number of the projects currently underway to support the PBA. (I chair the steering group.) Bob DiRico has given a summary of the Consistency Group, which is in charge of assuring consistency between the reserve and capital groups. Jim Lamson has given an update on the Annuity Reserve Working Group; they have provided a report to LHATF on their work. He asked LHATF whether the PBA rules would apply to new business only—the feedback from LHATF leaned toward it being applicable to new business only on day one. Sheldon Summers gave an update on both the Academy's reinsurance work group review of PBA documents with regard to reinsurance and the work of the reinsurance risk transfer subgroup, which is looking at possible changes to risk transfer rules in light of PBA. Larry Gorski gave an update on the Economic Scenarios Work Group. These new economic scenarios/calibration points are expected to be used for the stochastic testing of reserves as well as RBC C3 Phase 1 testing. The items referred to above are available on the Academy's Web site.

### Preferred Mortality

Larry Gorski gave an update on the joint SOA/AAA preferred mortality study. This work is basically on schedule to have proposed tables to feed the LRWG requirements for PBA in 2007, with more information on this expected in March 2007.

### ASB

Bob Meilander gave a report on a draft Actuarial Standard of Practice to support PBA, specifically to support some of the work the PBA actuary would need to do. This is not a fully vetted draft, but it shows how the ASB can help with the PBA.

### VACARVM

There were a number of comments that were

received on the exposed regulation on Reserves for Variable Annuities. There is a subgroup headed by Larry Bruning that is looking at what should be done here. This subgroup is going to do a survey of certain large variable annuity writers to provide more details. LHATF has exposed a VACARVM regulation, known as the Hartford proposal.

### Nonforfeiture Improvement Work Group

John McBain gave an update on the work of the Academy's Standard Nonforfeiture Law group. They are proposing a short-term solution to take care of the nonforfeiture changes needed in the regulations in order for PBA reserves to be implemented (i.e., de-link the nonforfeiture and reserve interest rates). This report will be available on the Academy Web site. There will also be a long-term solution incorporating new ideas into nonforfeiture. Volunteers are needed for this effort.

### GRET

One issue LHATF decided was not on PBA: LHATF voted to accept the new Generally Recognized Expense Tables for use in 2007. These factors will be used in life illustrations. There are some changes to the 2006 table, so they are worth reviewing.

### Life RBC C3 Phase 3

Peter Boyko presented an Academy report that proposed a PBA to capital for all life insurance. This was exposed for comment by the NAIC's Life Capital Adequacy Subcommittee. This may be adopted in June 2007 for implementation by year-end 2008.

### Summary

As you can tell from the above, much progress has been made on the PBA front. In the March 2007 NAIC meeting in New York I expect even more progress on PBA. □



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# Press Release: Across America, Valuation Actuaries Are Being Warmly Welcomed to Product Development Project Teams!

by Sharon Giffen



**O**K, maybe that is a bit of an exaggeration, but in the new pricing world with principles-based reserves, the role of valuation in the pricing process will change.

What role does the valuation team play in pricing? Why should pricing actuaries care?

In Canada, we have been pricing in a principles-based reserve environment for more than a decade. One significant benefit to both actuarial groups is a solid understanding of each other's roles and different perspectives brought to bear on the pricing exercise. Overall understanding of the risks of the new product is increased, which has led to better profitability results.

This article will set some context for how pricing actuaries will benefit from working together with their valuation colleagues, and help explain why it is that the pricing actuary should care greatly about how the valuation actuary views the risks. I will assume here that the risk is being priced using deterministic techniques.

### Pricing Cycle

First, the pricing and control cycle is much the same, regardless of the valuation method. You will undertake the same activities with respect to working with marketing to understand the product design and features, and assessing the risks they bring to your company. Appropriate assumptions are set and pricing models built. Sensitivity tests are critical to get a full understanding of risk exposures. Compliance activities are necessary to ensure that product filings are successful. Experience studies will be conducted to help develop the evolution of the assumptions for the next round of pricing.

The primary differences are in assumption setting and in modeling the reserves in the pricing model. In the process of assumption setting, the valuation team needs to be directly involved. Pricing, with or without the help of marketing, will explain to valuation the detailed nature of the product and the risks that must be covered by the price. Valuation actuaries tend to see things from a different perspective, one that can be very valuable in stress-testing the product. To assist valuation with their analysis, additional sensitivities may be requested.

Through this process, valuation will be assessing the best estimate assumptions that will ultimately underlie the reserves. Those assumptions are completely parallel to

the pricing assumptions—for mortality, lapses, expenses, all aspects of policyholder behavior and economic assumptions.

Is it reasonable for the valuation best estimate to be different from the pricing best estimate? If there is a difference, it must be justified. An example of a reasonable difference is projected mortality improvements. While this is a standard pricing assumption, improvements may not be permitted in reserves. Such a difference would be documented and is acceptable.

Valuation now has the responsibility to set the margins that will be included in the reserves. In Canada this is the purview of the valuation actuary, and margins are set in accordance with Standards of Practice. Generally, the margin reflects the amount of variability in the experience that is possible. The stronger a guarantee, the higher the margin; the less experience under the best estimate, the higher the margin.

The pricing team then incorporates full reserves, including the margins, into final profit testing. In the United States, if you have been using X factors, or if you price on a U.S. GAAP basis, you may have already undertaken some of this type of activity.

Pricing actuaries generally face challenges in balancing the need for low prices to satisfy competitive pressures versus the need to meet profit targets. In the new pricing world, you may find one of two outcomes: either your valuation area will be even more conservative, reinforcing that happy position of being in the middle; else, you will find that your valuation colleagues are of great support in your discussions with marketing—they may be able to help explain why you cannot meet both goals together. The most important consideration here is to ensure a common understanding of the mechanisms of the product. Valuation may well be able to suggest alternative or additional features that marketing finds acceptable, which will significantly mitigate one of their concerns. Finding the win-win solution is the goal.

## Financial Results

Earlier in this article, I mentioned that experience studies will be very important—not only for you to modify assumptions for the next pricing, but also because valuation will be updating their best estimates and margins as experience emerges. A significant impact occurs on financial results if experience turns out to be very different from that assumed in pricing.

An example will help to illustrate. Assume a very simple 20-year term policy.

Face Amount	\$250,000
Insured	Male, age 45, Non-smoker
Premium	\$883 annually
Mortality	90% of 2001 VBT
Profit Margin	5% of premium
Sales	\$1 million of premium

Let us compare the reserves under the U.S. Statutory Method of 1980 CSO with 4 percent interest and no X factor to the Canadian principles-based method, and look at the income statement in the fifth year.

(See Chart 1 on page 10).

Let us further assume that we discover, during the fifth year, that mortality has deteriorated from our expectation by 5 percent. All other assumptions have come precisely true. The valuation mortality assumption is increased by 5 percent.

Canadian reserves take the present value of that deterioration over the remaining lifetime of the policy into account. The reserve in Canada would increase from 9.71/1,000 to 11.43/1,000. The new pattern looks like Chart 2 on page 10.

What impact does that have on the income statement? You may be surprised at the impact compared to the expected statement as shown on page 11.

When that happens on the income statement, you can be pretty sure that your valuation colleagues will be paying you a visit to help them understand and explain “What happened?”

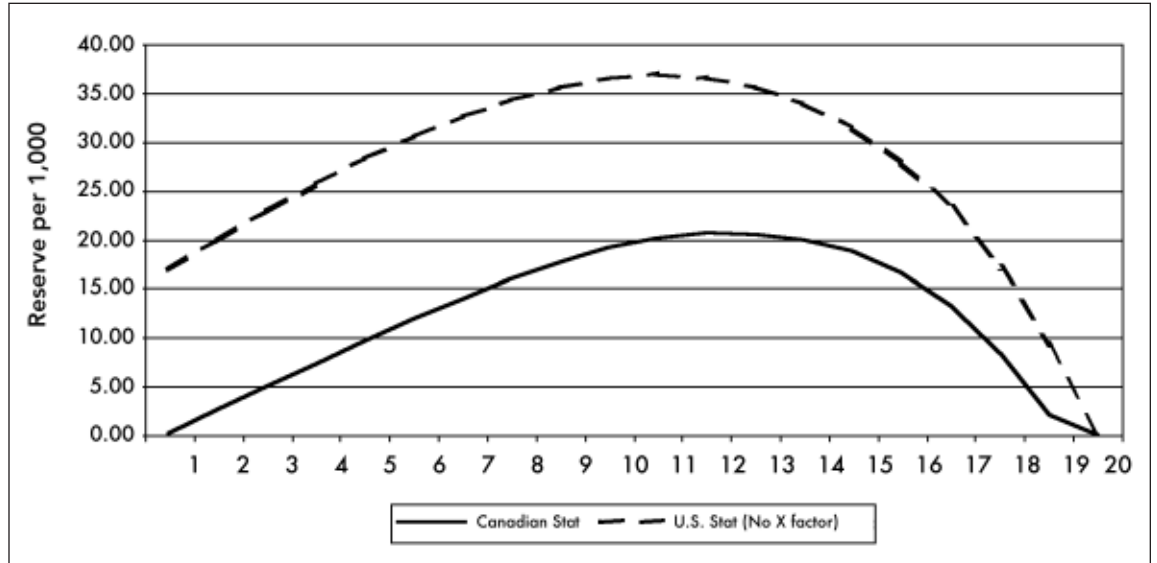
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**... your valuation colleagues are of great support in your discussions with marketing ...**

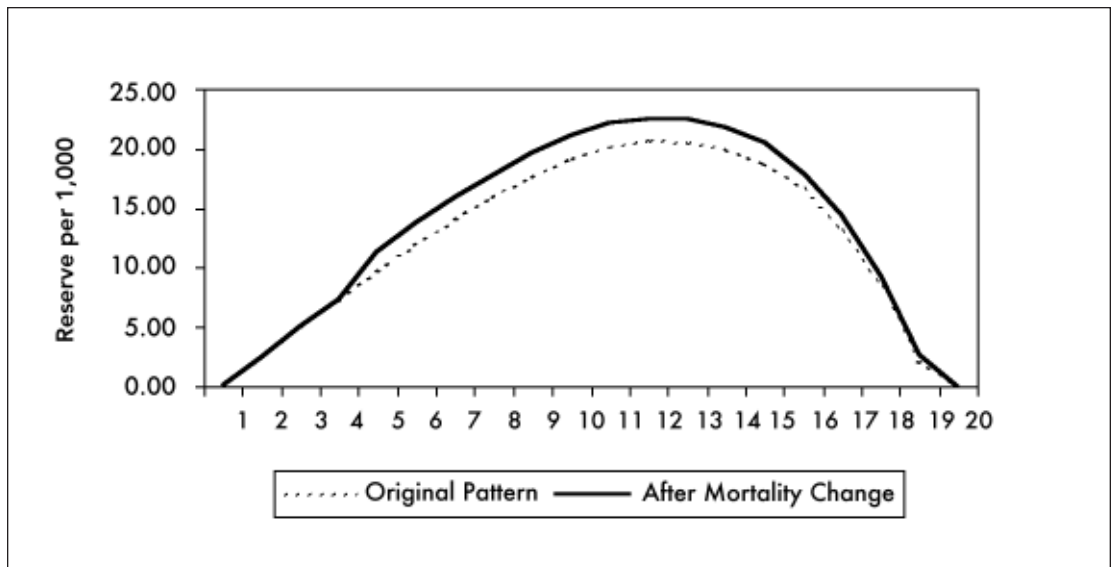
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continued on page 10

### Chart 1: Compare Canadian and U.S. Statutory Reserves



### Chart 2: Compare Canadian Reserve Patterns after Mortality Change



## Income Statement – Year 5

	Expected	Actual	Variance
<b>Income</b>			
Premiums	733,055	733,055	0
Investment Income	120,722	120,722	0
<b>Subtotal</b>	<b>853,776</b>	<b>853,776</b>	<b>0</b>
<b>Expense</b>			
Death Benefits	284,292	298,506	14,215
Increase in Reserve	370,995	705,895	334,900
General Expenses	32,321	32,321	0
Commission	14,661	14,661	0
<b>Subtotal</b>	<b>702,269</b>	<b>1,051,383</b>	<b>349,114</b>
<b>Profit</b>	<b>151,508</b>	<b>(197,607)</b>	<b>(349,114)</b>

Although not shown here, the future income statements will be very similar to the expected. The income impact of an assumption change is felt in its entirety in the year it is made.

### Risk Management Activities

Valuation and pricing together, with their separate perspectives, both provide significant benefits to enterprise risk management. There are many risks that arise from the products offered that are not technical risks. This does not mean that they should not be considered carefully in a pricing exercise. For example, if there is a sales practice that exposes the company to the possibility of a class action lawsuit from your customers, a united response is called for. Valuation will need to include the costs arising from the lawsuit when they set best estimates and margins for expenses. Pricing and marketing get together to modify the features, design or price to reduce the likelihood of ongoing or repeat offenses. And hopefully sales is managing the offending behavior to stop.

In Canada, there is one further piece of documentation provided to boards of directors and the regulator to assist in the understanding of risks faced by a company—

the Dynamic Capital Adequacy Testing Report. The appointed actuary stress tests the business model of the company with plausible adverse events. The events selected for modeling should cover all the material risks of the company, and the impact on solvency is examined. The scenarios do take into account that management can and should take mitigating steps to reduce impact. In this process, both valuation and pricing are consulted to gather the broadest possible perspective on risks, ancillary outcomes and mitigations.

In conclusion, this article is intended to provide some perspective about what will be different for the pricing actuary, and what will be the same. The pricing and valuation perspectives can work together very effectively to find the best pricing solution for the company. Pricing actuaries do need to care as much about the valuation assumptions, since they are very likely to be called on to help explain financial results—the cost of being wrong is high! And finally, the roles of actuaries in overall risk management are very important to give your company the best possible financial management for the future. □



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# New Products Target Consumers' Emerging Retirement Income Needs

by Noel Abkemeier, Douglas Bennett and Brent Hamann



*Editor's Note: This article reflects issues addressed in a Milliman research report released in September 2006.*

An increasing number of researchers are concluding that the only way to capture the wave of baby boomers focused on retirement income will be to target their products and services to very diverse needs, based on the different characteristics of consumers. Some would even argue that product alone won't be enough. To many, it's clear that both new and recycled products, along with some degree of advice and planning, will be required to adequately address the retirement income challenges facing most households.

Milliman recently identified broad consumer segments for retirement income. The segments were defined in terms of their preretirement income, assets and net worth. Upper Affluent households (the top 5 percent, or two million baby boomer households, based on net worth) control about \$13.4 trillion in total net worth and \$7.3 trillion in financial assets (\$2.7 trillion of which is in retirement accounts). Over half of their net worth is from nonfinancial assets, usually business and home equity. The Upper Affluent can be expected to have fewer needs for guaranteed retirement income options, but will likely consider income needs in conjunction with efficient wealth transfer solutions. The Lower Affluent segment consists of the next six million households, or about 15 percent of the baby boomer population. They represent \$8.3 trillion in total net worth and \$3.2 trillion in financial assets. Again, a significant share of the net worth for these households is home equity. Finally, the Middle/Mass Market represents the remaining 80 percent of baby boom households (roughly 32 million). The group in total represents \$6.3 trillion in total net worth and approximately \$2.0 trillion in financial assets. For many in this segment, their preretirement income is likely to be replaced by Social Security. They will also likely look for methods to guarantee an income from what retirement assets they possess, including home equity.

The product solutions range from narrowly targeted products to meet a specific need for the Upper Affluent, to simple but comprehensive products for the Middle/Mass market. Some of the solutions are in the market and well known, others less well known, and others have yet to be developed. A theme running through all of the products is protection from the longevity risk, the risk

of outliving assets when living beyond retirement life expectancy.

Pure longevity protection can be provided by deferred income annuities, which guarantee income at market rates at the time of issue, but do not provide income until much later. For example, purchasing at age 65 an income that will begin at age 85.

Guaranteed lifetime withdrawal benefits (GLWB) that provide the ability to make specified withdrawals from a variable annuity for a lifetime regardless of the contract value combine longevity protection and asset protection, while allowing the owner to maintain control of assets. Although GLWBs are already leaders in the variable annuity market, they have not yet been broadly used for true retirement planning. Additionally, they have potential to be expanded to provide inflation protection, recognize substandard lives, and include long-term care (LTC) benefits through increases in allowable withdrawals. The GLWB concept could also be applied to mutual funds.

Guaranteed minimum income benefits (GMIB) on variable annuities have provided a floor of asset protection and limited income protection. The guarantees can be strengthened to make GMIBs a more significant retirement protection vehicle.

Single premium immediate annuities will continue to play a primary role for the Middle/Mass market, but in the other markets they may be overshadowed by products that provide more flexibility or targeted solutions. The Lower Affluent market may find appeal in immediate variable or equity-indexed annuities. All of these can also include inflation, substandard and LTC risk dimensions.

Significant assets may be tied up in home equity, but there can be advantages to converting this to a liquid asset. Reverse mortgages have historically been for the “house rich but cash poor,” but a new generation of reverse mortgages that respond to the needs of more affluent homeowners will make them into a broader-based planning tool.

In addition to new product features, it may be time to refocus the sales message. Retirement accumulation has generally been the focus, but better awareness and income planning could be achieved with income denominated accumulations. This could be achieved with both mutual funds and annuities.

Ultimately the product design has to reflect the method used for delivering the right solution to each market. The Upper Affluent may have a financial advisor team, a member of which would bring the solution to solve a specific problem. The Lower Affluent may have a single financial advisor who is more likely to look for packaged solutions. The Middle/Mass market will require more basic retirement income advice and solutions, most likely provided through their worksites. For all segments, there are opportunities for pairing compelling retirement income product solutions with effective advice delivery. □

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**Ultimately the product design has to reflect the method used for delivering the right solution to each market.**

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# Eighty is the New Sixty

by Dan Cathcart



As the baby boomer generation approaches retirement, a looming question is, “How big does the piggy bank have to be?” A critical underlying factor contributing to this dilemma is how long we are going to live. Life’s longevity creates interesting market opportunities for insurers to address society’s financial security for an aging population.

Medical advances and healthier lifestyles are leading to an extension of our lifespan. In addition, some octogenarians have challenged traditional expectations of senior life through activities such as water skiing or running marathons. How can we be confident of our financial retirement planning when life’s boundaries are so uncertain?

The two risks most retirees are concerned with are:

- Outliving their assets
- Incurring excessive healthcare expenses

Insurance companies continue to respond to society’s increasing need for long-term security by designing products that address these significant, long-term risks and establish a predictable income stream for insureds—longevity income protection and long-term care insurance.

### Retiree Financial Planning Risks *Longevity Risk*

Living a long time may exhaust all available savings and assets. The table demonstrates the potential need for long-term planning. Current and future retirees face increasing longevity risk, not only as lifespans continue to lengthen, but also as historic sources of guaranteed income diminish (*e.g.*, defined benefit pension plans). Meanwhile, the variability of potential costs is also of greatest concern.

### *Investment Market Volatility Risk*

Without future additional income sources, investment income is the sole deterrent of asset depletion and exhaustion. Meanwhile, the longer the duration of dependence on investment income, the larger the impact of even a slight market variation from expected. Additionally, although investment cycles may balance out, the timing of income needs may become a concern if investments have to be sold during an unfavorable market. Therefore, someone planning for retirement is forced to be quite conservative in deciding when their savings can withstand investment market challenges, particularly in combination with the uncertainty of how long income will be needed.

### *Excessive Health Expense Risk*

Long-term healthcare expenses continue to be a large risk that retirees do not properly plan for. Most elderly acute medical expenses are covered by Medicare, but a longer lifes-

## At age 65, probability of living to:\*

Age	Male	Female	One or Both of a Couple
80	71%	81%	94%
85	53%	65%	84%
90	34%	44%	63%
95	17%	23%	36%
100	6%	9%	14%

\* Based on Society of Actuaries Annuity 2000 Basic Mortality Tables

pan means a greater likelihood for the need for long-term care, which Medicare does not cover. Forty-four percent of people reaching age 65 are expected to enter a nursing home during their lifetime according to the National Association of Insurance Commissioners', "A Shopper's Guide to Long-Term Care Insurance, 2003." Home care and assisted living care expenses are also very common. The costs for long-term care are typically underestimated and can quickly exhaust an individual's or couple's assets.

### ***Inflation Risk***

Financial planning also needs to anticipate the impact of inflation. Although there is often a reduction in spending habits at older ages, a fixed income may not keep pace with rising living costs.

### ***Risk of Underconsumption***

Although not a risk that is often considered, a retiree may hold back from activities that provide enjoyment if they don't know how long their assets will last. Also, because retirees want to avoid exhausting their assets, they often do not take full advantage of annual tax-free gifts. Instead, monies remaining after death end up subject to estate costs and taxes.

### **Longevity Product Solutions**

A longevity protection product can substantially assist with financial planning and provide a retiree with an improved feeling of independence and comfort. Investment and longevity risk shift to an insurer. Meanwhile, the potential for substantial future income is made available for a low relative cost.

More uncertainty is introduced the farther out a financial plan is projected. Longevity products guarantee a lifetime monthly income, and will begin payment following attainment of a specified age. Therefore, the critical unknown of how long invested assets need to last can be eliminated. Purchasing a longevity product allows a retiree to plan their savings and consumption within a shorter, fixed timeline.

### ***Financial Planning Example***

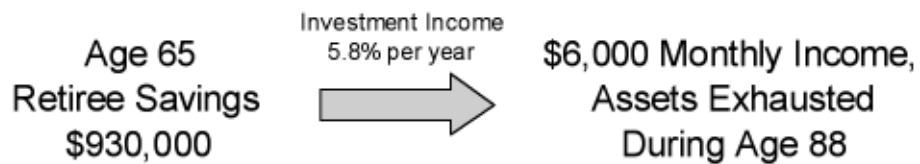
As opposed to depending on personal investment (Option A), a simple illustration (Option B) demonstrates how less than 10 percent of a current asset base can fit into a financial plan where remaining assets cover a \$6,000 per month income for the short term (on a self-insured basis), and a longevity product (deferred annuity) guaran-

continued on page 16

tees the continuity of \$6,000 per month for the long term. Also shown is an example of the increase in assets necessary to similarly prepare for a long lifespan through personal savings and investment (Option C). Lastly, examples are shown for investing in insur-

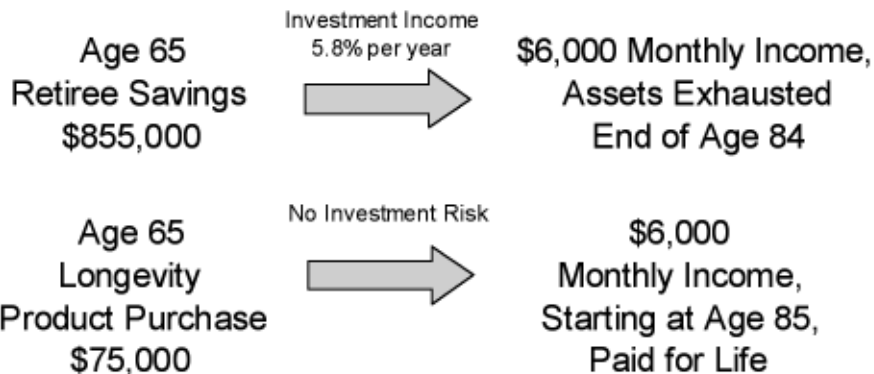
ance products that offer a \$6,000 guaranteed monthly income for life and start payout immediately (Option D). The risk with Option D is that assets will be lost if death occurs too soon. Tax effects have been ignored.

**Option A – retirement savings for an average lifespan**



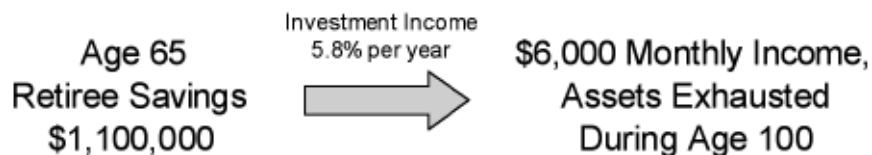
**Risk = Outliving Assets**

**Option B – retirement savings with longevity protection**



**Risk = Short-term investment risk  
Limited unnecessary insurance cost**

**Option C – retirement savings for an extended lifespan**



**Risk = Less consumption for enjoyment due to conservative savings**

Option D – immediate annuity purchase



**Risk = Loss of unnecessary insurance premium  
(magnitude depends on product and age of death)**

During the financial planning process, issues such as other income sources, other insurance coverage, investment income strategies, taxation, expected consumption patterns and many other issues will have to be discussed. Regardless, a longevity product can provide a definitive solution to retirement needs.

In addition to addressing the unknown of life expectancy, longevity product options can provide some protection for all of the risks outlined above.

A longevity product guarantee of a lifetime annuity income payment transfers investment risk to the insurance company.

Health expense coverage is obviously essential. Regular medical coverage is covered in part through Medicare. However, long-term care exposure needs to be part of financial planning considerations. Longevity product options can cover specific health expenses. For example, for a small extra premium an additional annuity will provide income for nursing home or assisted living facility residents. Other product variations can be used to cover inflation risks.

Premium rates depend on issue age, gender, the age at which the lifetime annuity is to begin, and the amount of the monthly income. Premiums can be paid as a

lump sum or over a defined period of time. Although nonforfeiture options are available, accepting the risk of receiving nothing if death occurs prior to annuitization provides for a much more leveraged economic return for covering the extended life risk.

A major value of insurance is the comfort provided from knowing you are protected against volatile events. Retirement financing is a growing concern for a large percentage of our population, who are facing a questionable economy and an increasing lifespan. Longevity and long-term care products provide essential income and expense

protection at a time when we are most vulnerable. Such products should be part of the retirement financial planning process and included in the product portfolios of insurers that want to fully address the spectrum of life's needs. □

**A longevity protection product can substantially assist with financial planning and provide a retiree with an improved feeling of independence and comfort.**



*Daniel B. Cathcart, ASA, MAAA, is a senior consultant with Towers Perrin in Weatogue, Conn. He can be reached at dan.cathcart@towersperrin.com.*

# What's New In Research?

by Ronora Stryker



Besides developing webcasts and seminars, the Product Development Section also sponsors a great deal of research to meet member needs for information, tools and insights to help them in their daily practice. One such project underway examines the possible impact of the change in premium after the end of the level premium period for individual term insurance products on mortality and lapse experience. A company survey of the top term insurance writers was recently conducted and the results are currently being analyzed by a Milliman research team led by Jeff Dukes and Kathy

Dziedzic. Findings will be made available in a report to be posted on the SOA's Web site by mid 2007.

"Stochastic Pricing For Embedded Options in Life and Annuity Products" is another project initiated by the section and is currently in the beginning stages. A formal request for proposals has been issued to find a qualified researcher to examine the nature of stochastic analysis for embedded options, develop a stochastic pricing methodology that can be utilized by insurers, illustrate the application of the method and identify implementation considerations. More information about the project is available at:

<http://www.soa.org/ccm/content/preview/areas-of-practice/life-insurance/request-for-proposal--stochastic-pricing-for-embedded-options-in-life-insurance-and-annuity-products/>

A recently completed section project that is receiving much attention and was featured in the *National Underwriter* is the Substandard Annuities Report. In this paper, the LIMRA International and Ernst & Young authors describe the substandard annuity products currently available in the marketplace, discuss the market opportunity for these products and the associated risk management issues of offering these products. To view more on this subject, visit:

<http://www.soa.org/ccm/content/areas-of-practice/life-insurance/research/substandard-annuities-report/>

When you have finished reading about substandard annuities, peruse the report on nontraditional guarantee products which contains the findings of a survey of company practices that summarize the various individual life and annuity product guarantee features found in the marketplace, their associated risks, the methodologies used to

analyze, quantify and manage these risks and their impact on policyholder behavior. This is also available on the SOA Web site at:

<http://www.soa.org/ccm/content/areas-of-practice/life-insurance/research/nt-guarantees-on-la-products/>

If you would like more information about any of these projects or are interested in getting involved in section-sponsored research

or have an idea for a research project that would benefit Product Development Section members, please contact Ronora Stryker, SOA research actuary, at [researchprojects@soa.org](mailto:researchprojects@soa.org). □



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## Upcoming Events Sponsored by the Product Development Section

### 2007 Life Spring Meeting

The Product Development Section will be sponsoring 12 informative sessions during the 2007 SOA Life Spring Meeting to be held on May 10-11, 2007 at the JW Marriott Desert Ridge in sunny Phoenix, Ariz. Be sure to attend to catch the latest information on:

- Retirement Products (3 sessions)
- Indexed Universal Life (2 sessions)
- Combination Products
- Life Settlements/Premium Financing
- Term Insurance
- Secondary Guarantee Universal Life
- Worksite Products
- Advanced Techniques in Pricing
- Global Products

### Product Development Actuary Symposium

The 2007 Product Development Actuary Symposium will be held June 25-26, 2007 in downtown Denver at the recently renovated Grand Hyatt Denver. Stay tuned for more information! □



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