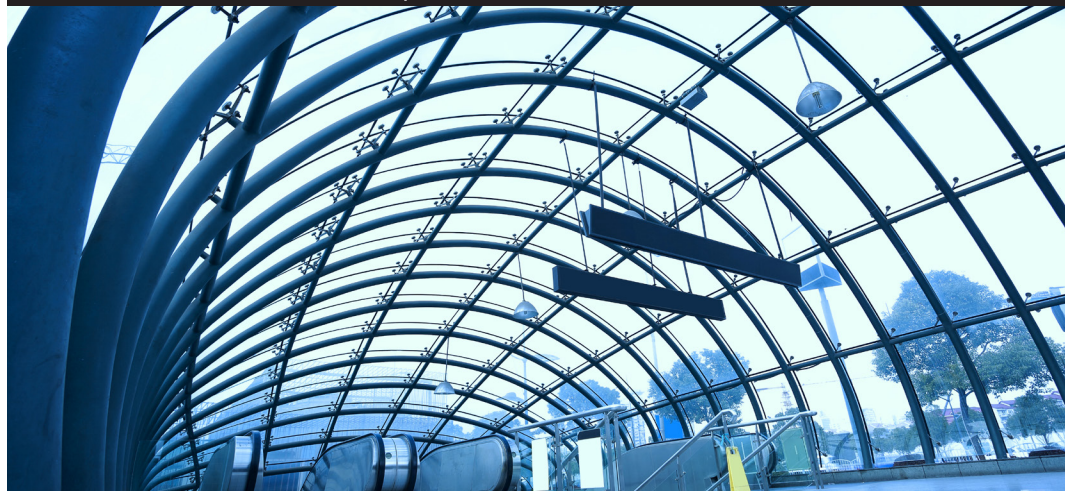


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## Results Of The 2013 SOA Life Reinsurance Survey

By David Bruggeman

**T**he final results of the 2013 SOA Life Reinsurance Survey are now available. The survey captures individual and group life data from U.S. and Canadian life reinsurers. New business production and in-force figures are reported with reinsurance broken into the following three categories:

(1) Recurring reinsurance: Conventional reinsurance covering an insurance policy with an issue date in the year in which it was reinsured. For the purpose of this survey, this refers to an insurance policy issued and reinsured in 2013.

(2) Portfolio reinsurance: Reinsurance covering an insurance policy with an issue date in a year prior to the year in which it was reinsured, or financial reinsurance. One example of portfolio would be a group of policies issued during the period 2005-2006, but being reinsured in 2013.

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This newsletter is free to section members.  
Current issues are available on the SOA website ([www.soa.org](http://www.soa.org)).

To join the section, SOA members and non-members can locate a membership form on the Reinsurance Section Web page at <http://www.soa.org/reinsurance>.

# Reinsurance news

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## Call for Articles for next issue of Reinsurance News.

While all articles are welcome, we would especially like to receive articles on topics that would be of particular interest to Reinsurance Section members.

Please e-mail your articles to Richard Jennings ([richard.jennings@cibc.com](mailto:richard.jennings@cibc.com)) or David Xia ([dxia@mit.edu](mailto:dxia@mit.edu)).

Some articles may be edited or reduced in length for publication purposes.

Issue 79 | August 2014



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# Chairperson's Corner

By Audrey Chervansky

2014 has been a busy year for the Reinsurance Section Council. We kicked off the year with a half-day, face-to-face meeting. This provided us with an opportunity to share ideas at a depth and breadth that our one-hour monthly phone calls don't allow for. Many good ideas were raised that will be used for meeting sessions, webinars, newsletter articles, etc. In addition, it gave us a chance to get to know each other better—which is one of the reasons many of us want to get involved.

We received the message from last year's survey results that continuing education is a top priority for many of our section members. To this end, we sponsored sessions at this year's Life & Annuity Symposium, the Health Meeting, and will be sponsoring sessions at the Annual Meeting. As well, keep your eyes open for details around a one-day Advanced Reinsurance Seminar to be offered on August 27, immediately after the Valuation Actuary Symposium. We hope that the NYC venue will appeal to the meeting attendees as well as the many reinsurance professionals working in the metropolitan area.

We continue to be committed to research, and always welcome any ideas that you may have. Currently, the subteam is hard at work on research studies involving accelerated benefit riders and term conversion experience.

Hopefully, many of you noticed a new communication that we are experimenting with. At the end of April, we sent out our first news blast to section members. Our intent is to keep the communication brief and relevant—covering highlights that we wouldn't want you to miss.

Lastly, we just want to thank each of you for your continued support of the section. We hope that you feel a bit more connected to the reinsurance community by being a member and encourage you to stay involved. Beyond the education and research, we feel that it is important to provide networking opportunities as well. If you are heading to the SOA Annual Meeting this fall, please plan on attending the section breakfast and/or our beer tasting/golfing event. They are both being organized to provide a great opportunity for us to connect, and we hope to see you there!

Enjoy the newsletter! ■



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(3) Retrocession reinsurance: Reinsurance not directly written by the ceding company. Since the business usually comes from a reinsurer, this can be thought of as “reinsurance of reinsurance.”

### INTRODUCTION

“Anyone can have a bad century.”—Anonymous Chicago Cubs fan

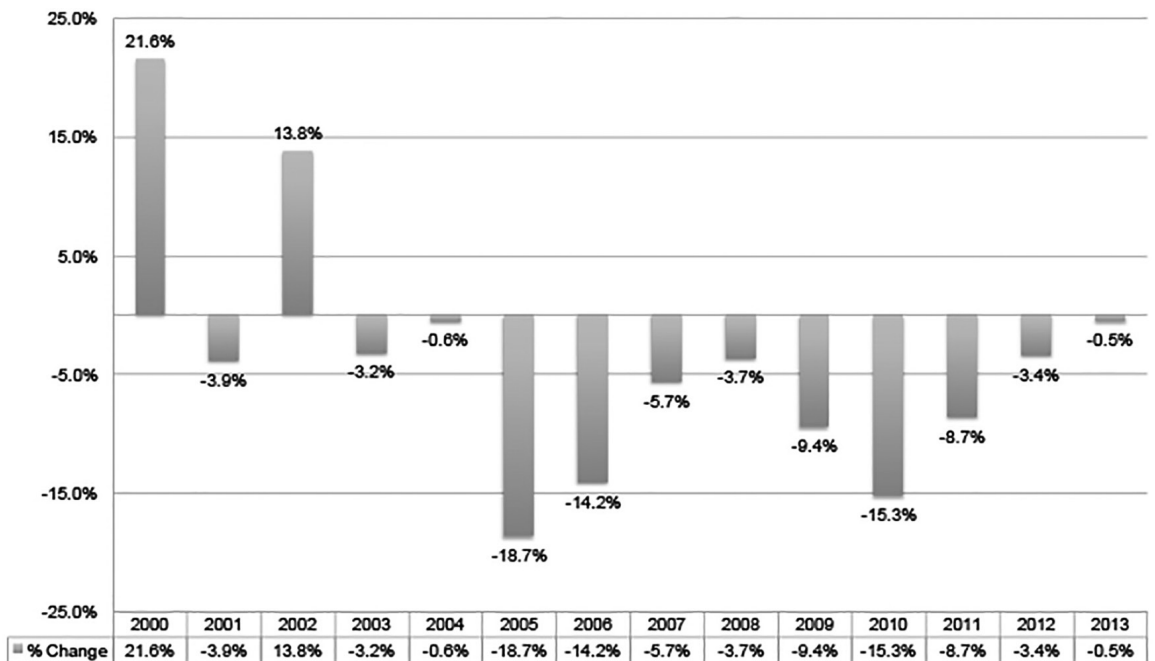
While the U.S. life reinsurance market hasn’t struggled quite as long as those lovable losers from Chicago (105 years and counting since winning their last World Series), it had recorded 10 straight years of declining new business production going into 2013. Like the hope that springs eternal from diehard Cubs fans entering a new season, life reinsurers were cautiously optimistic 2013 could be the year to reverse the declining trend in production. After all, the economy was slowly coming back and direct life insurance sales had been stable the past few years. Would the economic momentum be enough to

pump up life sales and, in turn, reinsurance production? The results of the 2013 SOA Life Reinsurance Survey help explain what occurred in the U.S. and Canadian life reinsurance markets in 2013.

### UNITED STATES

The biggest news for the U.S. life reinsurance industry in 2013 was SCOR Global Life acquiring Generali USA Life Re. SCOR acquired Generali for a reported \$920 million. This deal comes just two years after SCOR acquired Transamerica Re in 2011. Both of these deals were major acquisitions in the industry as Generali was the No. 4 U.S. new business life reinsurer in 2012 and Transamerica was the No. 3 U.S. life new business reinsurer at the time of being acquired. These recent acquisitions pushed SCOR to the top spot in U.S. new business writings for 2013. In more recent news, the Canada Pension Plan Investment Board (CPPIB), along with management of Wilton Re, agreed to buy Wilton Re Holdings, for \$1.8 billion. This is CPPIB’s first direct investment in the insurance sector.

Annual Percentage Change in U.S. Recurring New Business (2000-2013)



## RECURRING

In 2013, \$443 billion of recurring new business was written in the United States. This is on par with the \$445 billion reported in 2012. While extremely close, 2013 production just missed the level needed to break the drought that saw new business writings fall each of the past 10 years. During this 10-year span, U.S. recurring dropped nearly 60 percent. On a more positive note, the decrease in production reported in 2013 was less than 1 percent.

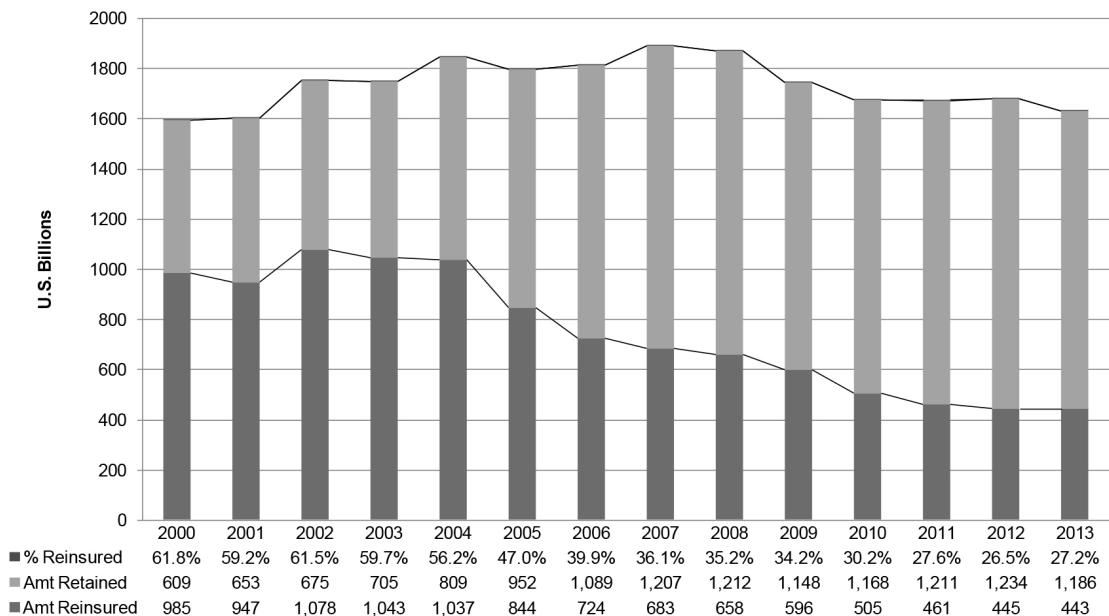
The following table shows the annual percentage change in U.S. recurring new business production since 2000.

Arguably the best measure of the current state of the life reinsurance market is the cession rate. The cession rate is defined as the percentage of new business writings that were reinsured in that year. It shows how popular reinsurance is with the direct writers. LIMRA estimates U.S. direct sales were down by 3 percent by face amount in

2013.<sup>1</sup> Using LIMRA's estimate for 2013, U.S. life sales, and this survey's recurring reinsurance figure, a cession rate of 27.2 percent is estimated for 2013. Assuming this estimate holds true, this would be the first cession rate increase the U.S. market has experienced since 2002. The following graph shows U.S. ordinary life insurance sales and the cession rates since 2000.

By face amount, 2013 direct sales were at their lowest level since 2001. One factor impacting 2013 life sales was repricing or halting sales of no lapse guarantee universal life (UL) products affected by more expensive reserve guidelines. Looking at the table above, modest direct growth was seen from 2001 through 2007; however, since 2007, direct sales have fallen 14 percent. Although direct sales were at similar levels in 2001 and 2013, the percent reinsured is drastically different. Almost 60 percent of direct sales were reinsured in 2001, but only 27 percent in 2013. One other item worth noting is on an amount basis, the \$443 billion of recurring new business reported in 2013 is the lowest amount since 1996.

U.S. Ordinary Individual Life Insurance Sales

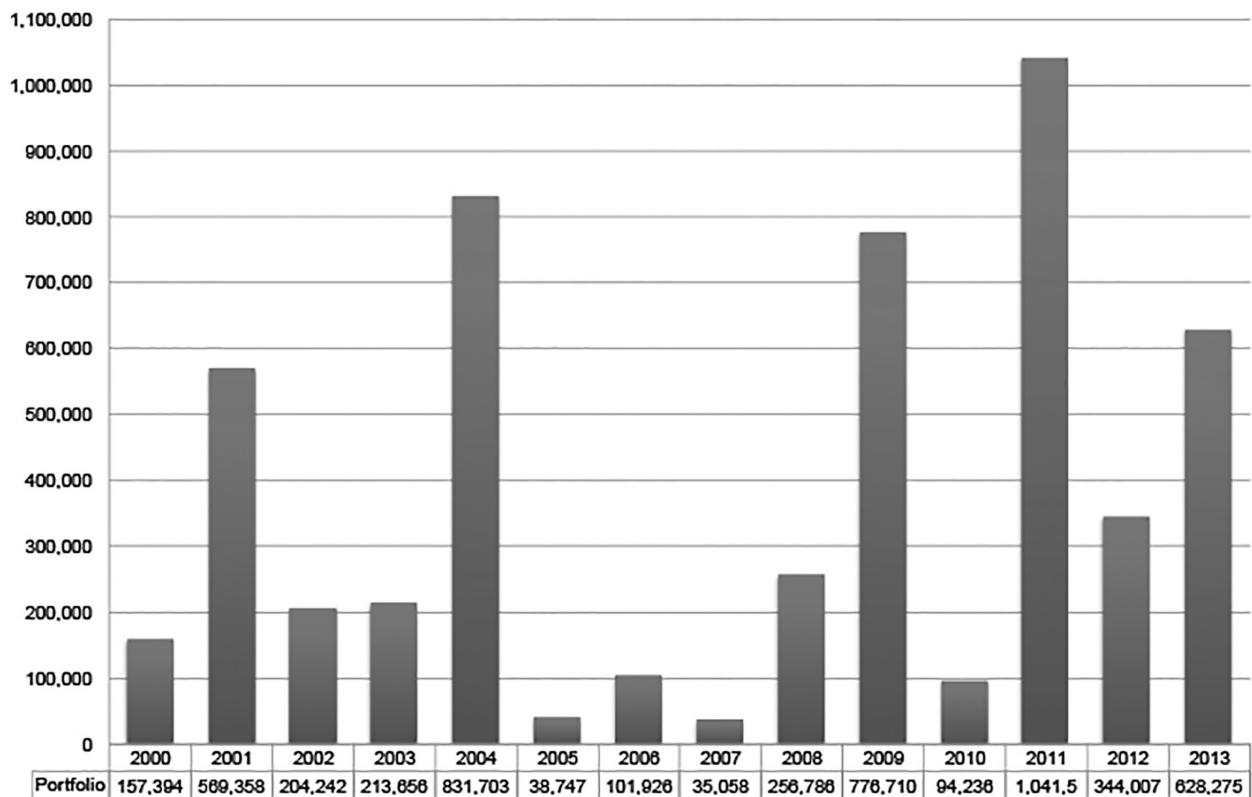


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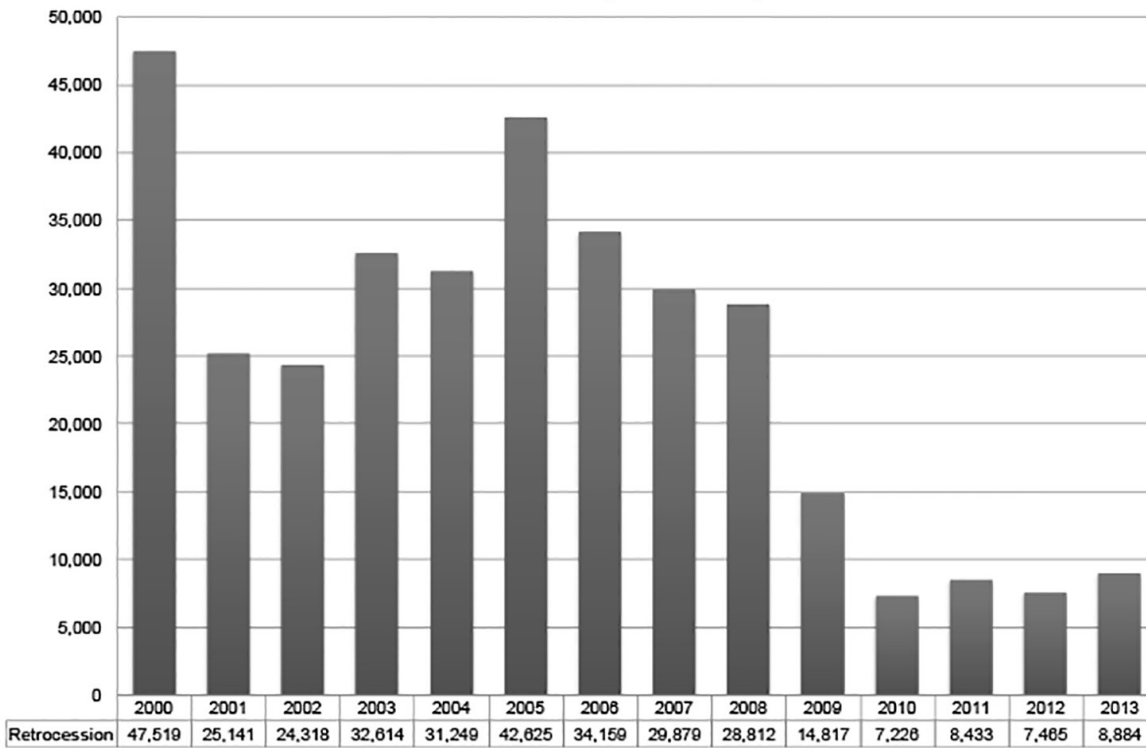
U.S. Ordinary Recurring Reinsurance (U.S. Millions)

Company	2012		2013		Change in Production
	Assumed Business	Market Share	Assumed Business	Market Share	
SCOR Global Life	76,547	17.2%	125,025	28.2%	63.3%
Swiss Re	81,188	18.2%	86,654	19.6%	6.7%
RGA Re. Company	87,115	19.6%	85,936	19.4%	-1.4%
Generali USA Life Re	63,820	14.3%	Acquired by SCOR		0.0%
Munich Re (US)	62,654	14.1%	67,131	15.2%	7.1%
Hannover Life Re	40,885	9.2%	47,095	10.6%	15.2%
General Re Life	12,696	2.9%	12,313	2.8%	-3.0%
Canada Life	8,668	1.9%	7,677	1.7%	-11.4%
Optimum Re (US)	5,124	1.2%	6,858	1.5%	33.8%
Wilton Re	6,684	1.5%	4,369	1.0%	-34.6%
RGA Re (Canada)	37	0.0%	2	0.0%	-94.6%
Aurigen	0	0.0%	1	0.0%	100.0%
<b>TOTAL</b>	<b>445,418</b>	<b>100%</b>	<b>443,061</b>	<b>100%</b>	<b>-0.5%</b>

Portfolio (\$ Millions)



### Retrocession (\$ Millions)



Coinsurance of level term business played a key role in the growth and high cession rates enjoyed by the U.S. life reinsurance market in the early 2000s. The level of coinsurance business has fallen since the mid-2000s and, with that, so has the overall level of life reinsurance in the United States. To illustrate, coinsurance accounted for 37 percent of U.S. life reinsurance new business in 2009—the first year the survey started collecting YRT/coinsurance data—but has steadily dropped to the 25 percent recorded in 2013.

The table below shows the recurring results at the company level.

SCOR's acquisition of Generali USA in 2013 vaulted them to the top recurring spot. The \$125 billion reported by SCOR in 2013 was almost \$40 billion higher than the next reinsurer, Swiss Re. While SCOR's 28.2 percent market share led all U.S. life reinsurers, the \$125 billion reported in 2013 is \$15 billion less than what SCOR and Generali combined for in 2012. Swiss Re secured the second spot with \$86.7 billion of recurring. This was a 7 percent increase from 2012 and equates to a 19.6 percent market share. Close behind Swiss was RGA, which re-

ported \$85.9 billion of recurring new business. This was just a slight decrease from their 2012 writings and good enough for a 19.4 percent market share. Munich Re was the fourth leading recurring writer with \$67.1 billion reported and a 15.2 percent market share. This represents a 7.1 percent increase in production from 2012. Rounding out the top five was Hannover, which reported a 15.2 percent increase in recurring writings. Hannover's \$47.1 billion in reported recurring captured a 10.6 percent market share. Collectively, the top five reinsurers accounted for 93 percent of the U.S. life reinsurance market.

### Canada Ordinary Recurring Reinsurance (\$CAN Millions)

Company	2012		2013		Change in Production
	Assumed Business	Market Share	Assumed Business	Market Share	
RGA Re (Canada)	49,290	33.1%	45,763	32.0%	-7.2%
Munich Re (Canada)	42,439	28.5%	42,593	29.7%	0.4%
Swiss Re	29,466	19.8%	28,095	19.6%	-4.7%
SCOR Global Life (Canada)	12,867	8.6%	13,968	9.8%	8.6%
Aurigen	7,317	4.9%	6,668	4.7%	-8.9%
Optimum Re (Canada)	7,446	5.0%	6,104	4.3%	-18.0%
<b>TOTALS</b>	<b>148,825</b>	<b>100%</b>	<b>143,191</b>	<b>100%</b>	<b>-3.8%</b>

CONTINUED ON PAGE 8

## THE LARGEST LIFE INSURANCE POLICY EVER SOLD IN THE UNITED STATES WAS RECENTLY BOUGHT AT \$201 MILLION.

Production levels materially drop off after the top five reinsurers. The remaining six reinsurers reporting recurring business in the United States account for 7 percent of the market share. Only one of these reinsurers had a market share above 2 percent. General Re wrote \$12.3 billion of recurring, Canada Life wrote \$6.9 billion and Wilton Re wrote \$4.3 billion. RGA Re (Canada) and Aurigen both reported minimal recurring business in 2013.

### PORTFOLIO

Outside of SCOR's acquisition of Generali, there was a drop in portfolio writings compared to 2012. The Generali acquisition accounted for much of the \$628 billion in total portfolio reported in 2013. In addition to the Generali acquisition, SCOR also reported portfolio writings with the direct market. Others reporting measurable portfolio new business were Hannover (\$35 billion), Canada Life (\$4 billion), and RGA (\$2 billion). Wilton Re and Aurigen each reported around \$1 billion of portfolio in 2013.

The decrease in portfolio writings should not be interpreted as being little in-force block activity in the United States. Insurers continue to shed their non-core business, but there is a growing interest in these blocks from markets outside of reinsurance, such as other direct writers and private equity firms. The following are some notable block acquisitions from 2013:

- Delaware Life Holdings, a Guggenheim Partners affiliate, acquired Sun Life's U.S. annuity business and certain life insurance business.
- Resolution Life Holdings agreed to buy Lincoln Benefit from Allstate.
- Kansas City Life assumed the transfer of American Family Life Insurance Company's variable life and annuity policies.
- Protective Life acquired MONY Life Insurance Company.

Both Resolution Life and Wilton Re's new owners have made known their desire to acquire additional closed-block life insurance business in the United States.

### RETROCESSION

The U.S. retrocession market appears to have stabilized after recording dramatic decreases in the mid-2000s. The

last four years have produced very consistent writings, totaling between \$7 billion and \$9 billion each year. Overall, the retrocession market recorded a 19 percent increase in production—going from \$7.5 billion in 2012 to \$8.9 billion in 2013. Production levels were similar between the three retrocessionaires: AXA Equitable (\$2.7 billion), Berkshire Hathaway (\$3.0 billion) and Pacific Life (\$3.2 billion). Each of the retros enjoyed increases in production from 2012.

### CANADA

Canadian recurring production fell 3.8 percent in 2013. This marks the second straight year of decreasing production. The \$143.2 billion reported by Canadian reinsurers in 2013 is the lowest level experienced in Canada since 2007. LIMRA estimates 2013 direct sales in Canada remained at a similar level as experienced in 2012. Positive growth was seen in the second half of the year. Stable direct sales coupled with declining recurring production means the Canadian cession rate took another hit. However, where the U.S. cession rate is estimated to be 27 percent in 2013, the Canadian cession rate remains much higher and is estimated to be around 60 percent.

### RECURRING

Recurring decreases were reported from four of the six Canadian reinsurers with only Munich and SCOR recording increases in 2013. The top three Canadian life reinsurers remain, in order of production: RGA, Munich and Swiss. Collectively, these three companies comprise 81 percent of the market share. RGA retained the top position despite a 7 percent reduction in new business writings. The \$45.8 billion it wrote in 2013 captured 32 percent of the market share. Munich's \$42.6 billion of new business writings in 2013 was on par with its 2012 writings and placed it in the second position with a 30 percent market share. Holding down the third position is Swiss Re, which wrote \$28.1 billion in 2013. This equates to a market share of 20 percent.

Trailing the top three were SCOR Global Life, Aurigen and Optimum. SCOR's \$14.0 billion of recurring new business was an 8.6 percent increase over 2012 production and captured 10 percent of the market. Both Aurigen and Optimum reported decreases in production, which resulted in market shares below 5 percent. Aurigen wrote \$6.7 billion for a 4.7 percent market share and Optimum reported \$6.1 billion for a 4.3 percent market share.



## PORTFOLIO AND RETROCESSION

There was no portfolio business reported in Canada in 2013. This followed a very quiet year for portfolio in 2012 and is in contrast to the block activity occurring in the United States.

Retrocession continues to play a minor role in the Canadian life reinsurance market. Comparing retro production to recurring production reveals recurring reinsurers are sending less than 1 percent of their business to the retros. The three retrocessionaires—Berkshire Hathaway, Pacific Life and AXA Equitable—collectively reported \$960 million, which is an 8.7 percent increase from 2012. Berkshire wrote \$434 million; Pacific Life wrote \$400 million; and AXA reported \$126 million.

## THE BOTTOM LINE

“Wait ‘til next year!” is another rallying cry of faithful Chicago Cubs fans (unfortunately it’s often chanted just one month into the season!). There are some positive factors that suggest life reinsurers may be feeling similarly entering 2014. Signs supporting a hopeful outlook include:

1. U.S. unemployment is at a five-year low.
2. The Dow Jones reached an all-time high at the end of 2013.
3. The gross domestic product (GDP) showed strong momentum going into 2014 by exhibiting increases in the last few quarters.

As a result, many industry experts predict direct sales may increase 2 to 3 percent in 2014. Other factors expected to impact the life reinsurance market in the near future are:

- **In-force block opportunities:** Life insurers are expected to continue to divest non-core operations. Already in 2014, we have seen Wilton Re acquire Conesco Life Insurance Company from CNO Financial Group and Continental Assurance Company from CNA Financial.
- **Regulation:** The use of captives and other funding structures has been under review by regulators, specifically for ULNG products and level term products. If restrictions are placed on the use of parent-owned captives to cover life insurer risk, direct writers may, once again, turn to reinsurers for capital assistance.

- **Direct sales growth opportunities:** A recent Nationwide Financial survey suggested U.S. lives are underinsured by an average of \$1.2 million.<sup>3</sup> Some ways the direct market is trying to close this gap is by reaching the following markets:

- **Tech-savvy market:** According to a recent LIMRA survey, 77 percent of top executives surveyed agreed more companies will be designing simple, easy-to-understand life insurance policies for tech-savvy, self-directed consumers.<sup>4</sup>
- **Middle market:** Non-traditional distribution approaches may be one way to reach this elusive, but significant, group. One example is MetLife selling simplified life policies in Wal-Mart. Accenture’s 2013 Consumer-Driven Innovation Survey found that more than two-thirds of customers would consider purchasing home, auto and life insurance from sources other than insurers, and 23 percent were open to purchasing from online service providers like Amazon or Google.<sup>5</sup>
- **Aging market:** Combo products, particularly insurance products combining life and living benefit (LTC), have become increasingly more popular as the U.S. population ages.

One thing is for certain—life reinsurance is not going away. Take, for instance, the largest life insurance policy ever sold in the United States was recently bought at \$201 million. Given the current life insurance environment, it’s no wonder life reinsurance has been referred to as “the ultimate business-to-business exchange.”

Complete survey results can be found in the Publications section of the Munich Re website, [www.marclife.com](http://www.marclife.com).

## DISCLAIMER:

Munich Re prepared the survey on behalf of the Society of Actuaries Reinsurance Section as a service to section members. The contributing companies provide the numbers in response to the survey. These numbers are not audited, and Munich Re, the Society of Actuaries and the Reinsurance Section take no responsibility for the accuracy of the figures. ■

## ENDNOTES

- <sup>1</sup> LIMRA, “U.S. Individual Life Insurance Sales, Fourth Quarter 2013,” March 2014.
- <sup>2</sup> LIMRA, “Canadian Individual Life Insurance Sales, Fourth Quarter 2013,” March 2014.
- <sup>3</sup> Nationwide Financial, “Life Insurance/Income Replacement Study,” August 2013.
- <sup>4</sup> LIMRA, “2014 Predictions Report,” January 2014.
- <sup>5</sup> Accenture, “2013 Consumer-Driven Innovation Survey: Playing to Win,” January 2014.

# A Message From The Frontier: The Living To 100 Symposium

By Jean-Marc Fix



Jean-Marc Fix is vice president, Research and Development, for Optimum Re in Dallas, Texas. He can be contacted at [jean-marc.fix@optimumre.com](mailto:jean-marc.fix@optimumre.com).

Once upon a time a man had a vision. Many stories start like this but not so many take place in the actuarial world. Bob Johansen conceived the idea of a symposium unlike any the SOA had done until that time: a multidisciplinary meeting of the minds to better understand older age mortality. The concept of the Living to 100 and Beyond Symposium was born and in 2002 the first symposium took place. Five symposia and twelve years later, the Symposium is still going strong thanks to a dedicated team of volunteers embracing his vision.

This triennial symposium has evolved through the years to extend from the pure mortality aspect of older ages focused on annuities to a broader coverage. This includes mortality projections and life expectancy improvements but also medical advances and societal and individual implications of a rapidly growing older age population. It is a unique venue where specialists from the actuarial, governmental and academic world mingle, listen to informational papers and exchange views on what the future will bring for the oldest olds and what that will mean for individuals, for insurance companies and for the different countries represented.

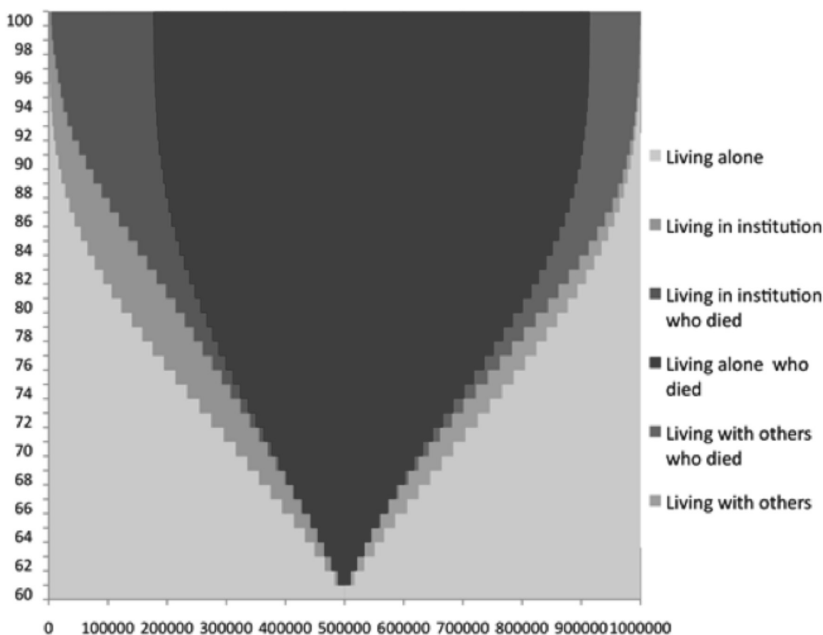
Several features make the symposium a unique offering among the many professional meetings the SOA offers. The breadth of the field represented by the speakers, the variety of topics and the occasion for frank discussion and debate both during and between the sessions is unmatched. At what other meeting can you hear Jim Vaupel, a world famous demographer and Founding Director of the Max Planck Institute for Demographic Research (talking about the future downward trend of older age mortality) and Anthony Atala, director of the Wake Forest for Regenerative medicine (talking about recent development in biological organs manufacturing using 3D printer technology)?

While discussing the symposium with Andrew Jenkins, VP of Annuity Product Development at Protective Life, for an upcoming presentation at the Life and Annuity Symposium, he mentioned that one of his biggest take home message was not the what but the how of the message. Because of the diversity of presenters, the information about mortality is presented in a variety of different ways that may encourage us to try new ways to tailor the right mortality message for our customers or for our upper management. I personally liked the graphs used by Michel Poulain (the originator of the “blue zone” concept of communities fostering longer living) and Anne Herm to illustrate the trajectories of residential support that centenarians start using at age 60 [1].

Each symposium has its own “vibe” and by that I mean a message which, by accident or design, pervades many sessions. This year the vibe I picked up is relating to mortality improvement at the older age.

Rectangularization of the survival curve refers to the fact that the survival curve appears to get closer and closer to a rectangle as we get closer to the present time. The ultimate rectangularization would imply that no one would die an untimely death but all would die very close to a maximal age, putatively around 105-110. This is the theory of mortality compression and in the first two symposiums there was reasonable consensus that it was in fact the case.

Living arrangement trajectories for those never married persons living alone at 60



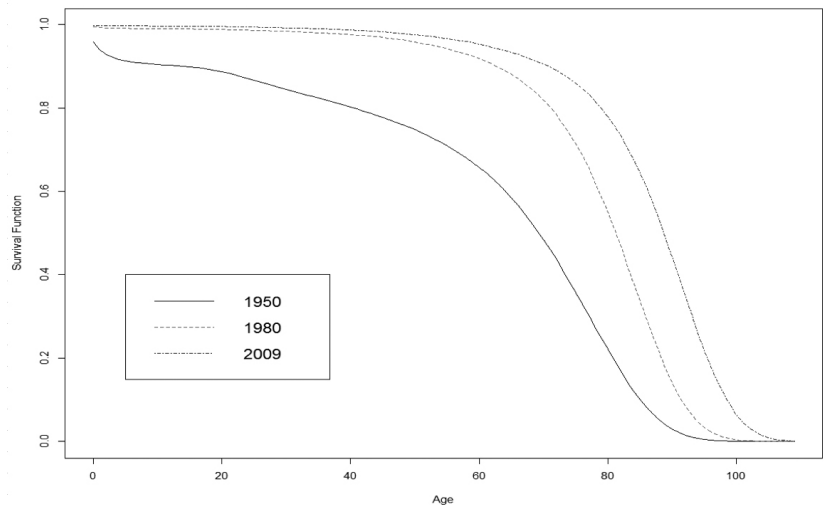
In this year's symposium, 12 years later we have additional data. In addition a number of methodological issues have been raised on precisely defining rectangularization and whether some calculation methods created distortions. It now appears that the survival curves have started once again to expand at older ages, suggesting that the maximum age was only a temporary setback and opening the tantalizing vision of increasing life expectancy and improving mortality even at the extreme older ages[2,3,4]. You get a unique feel at the symposium that you are at the edge of the known and the unknown with the ever moving frontier between the two being redrawn in front of our very eyes.

Having graduated from a small liberal arts school, I am a big proponent of liberal arts, especially for a technical field such as ours. The symposium provides just that: a liberal education for the actuary, exploring the many aspects of mortality at the older ages and looking not only at the mathematical modeling but also at the societal impact of that mortality. There are no massive revelations at the edge of knowledge but a relentless push to gather data and understand its implications and applications. This puts our profession in its proper context as a community of thinkers facing and addressing challenging problems not only for our employers but for society at large.

See you there in three years.

The SOA will publish a 2014 Living to 100 monograph of papers presented at this symposium. To learn more, go to <http://livingto100.soa.org>.

Figure 1. The Survival Curves of Japanese Female



## REFERENCES

- [1] "Which Socio-demographic Living Arrangement Helps to Reach 100?" presented by Michel Poulain & Anne Herm
- [2] "Biodemographic Study of Mortality Trajectories at Advanced Old Ages" presented by Natalia S. Gavrilova & Leonid A. Gavrilov
- [3] "Measurement of Mortality among Centenarians in Canada (Quebec) Based on Nominative Data" presented by Nadine Ouelette and Robert Bourbeau
- [4] "A Study of Mortality Compression and Longevity Risk" presented by Jack C. Yue ■

# New Opportunities For Pension Plan De-Risking In Canada: Longevity Risk Hedging Contracts

By Paul Belanger, Jeremy Forgie, Adam Ngan and Elizabeth Sale



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Pension plans in Canada and around the world are increasingly facing liability challenges, in part due to increasing life expectancies. Defined-benefit pension plans provide a pension payment to pensioners until their death, and these pension plans rely on mortality assumptions to predict future liabilities. Pensioners living longer than would be expected based on mortality assumptions can therefore result in higher-than-expected payments, which is known as longevity risk. Some observers expect life expectancies to continue increasing, at least in the medium term. For example, Canadian life expectancy has increased from 74.9 years in 1979 to 81.1 years in 2009.<sup>1</sup> As a result, many sponsors of defined-benefit pension plans in Canada are now focusing on strategies for reducing longevity risk, including the use of longevity insurance contracts and longevity swaps (referred to as longevity risk hedging contracts).

There is a relatively well-developed market in the United Kingdom for longevity risk hedging contracts, which aim to mitigate longevity risk. Longevity risk hedging contracts transfer longevity risk to a third party such as an insurance company or a bank, providing greater predictability of future liabilities for pension plans.

In Canada, there is a well-established buy-out annuity market, and buy-in annuities have also been implemented by a number of pension plans in different jurisdictions across Canada. The Canadian federal pension and financial institution regulator (the Office of the Superintendent of Financial Institutions—OSFI) has published a general policy that addresses issues such as the characterization of a buy-in annuity as an investment for the purposes of pension legislation and the treatment of a buy-in annuity contract for the purposes of a pension plan actuarial valuation.<sup>2</sup>

While the use of longevity risk hedging contracts is still at an early stage in Canada, we are aware of growing interest in these arrangements, and they represent an opportunity for Canadian pension plans to achieve longer-term sustainability. OSFI published a policy advisory in June 2014 stating its position on longevity risk hedging contracts.

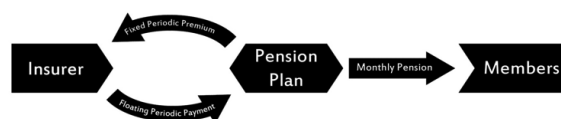
This article summarizes some of the regulatory considerations for Canadian pension plans considering the use of longevity risk hedging contracts.

## HOW LONGEVITY RISK HEDGING CONTRACTS WORK

Briefly, longevity risk hedging contracts are financial arrangements in which a pension plan provides periodic fixed payments or premiums to a third party such as an insurance company or a bank (the counterparty). In exchange, the counterparty provides periodic floating payments to the pension plan. A longevity risk hedging contract may take either the form of an insurance contract, structured as an indemnity contract, or the form of a swap derivative.

There are generally two types of floating payments: 1) floating payments based on the pension plan's actual mortality experience (indemnity-based), which may be part of an insurance contract; or 2) floating payments based on an agreed-upon mortality index (index-based) or other contractual basis that closely replicates the plan's actual experience, which may be part of a swap contract. Generally, payments between the pension plan and the counterparty will be netted. Payments to pensioners will continue to be made directly from the pension plan and will remain an obligation of the plan unlike, for example, a buy-out annuity where the annuitant would have a contractual or statutory claim against the insurer. An example of a structure of a longevity risk hedging contract is set out in Figure 1.

Figure 1: Structure of a Longevity Risk Hedging Contract



Should the plan's actual mortality experience or the agreed-upon mortality index (or other agreed-upon measure) have longer-than-predicted life expectancies, the pension plan's fixed payments to the counterparty will remain constant while the increase in payments will be borne by the counterparty. Conversely, should the plan's actual mortality experience or the agreed-upon mortality index be lower than predicted, the pension plan's payments will remain the same while the counterparty's floating payments will decrease. The periodic fixed payments by the pension plan (to the counterparty) provide predictable outlays since the counterparty has assumed the longevity risk, i.e., increased payments due to pensioners living longer than expected.

The general structure of longevity risk hedging contracts can have some similarities to that of buy-in annuities. However, unlike a buy-in annuity where a lump-sum premium is paid for in exchange for periodic payments by a counterparty, the pension plan continues to be obligated to make the periodic fixed payments to the counterparty for the term of the longevity risk hedging contract and therefore in effect continues to retain investment risk, i.e., the risk that there will not be sufficient pension fund assets. As well, longevity swaps would typically involve collateral being pledged for the net obligation, which may secure the longevity risk hedging contract. Collateralization may be required by both the pension plan and the counterparty, depending upon the terms of the longevity risk hedging contract. Pension plans posting collateral should ensure that this is done in compliance with the plan's terms and applicable pensions or income tax legislation that contains, among other things, limitations on the ability of a pension fund to borrow money.

## LEGAL FRAMEWORK

Notably, the use of a longevity risk hedging contract does not change the legal relationship between the pensioners and the pension plan. Pensioners will continue to receive their pensions in accordance with the terms of the pension plan and from the pension plan. The pension plan is still ultimately responsible for paying pension benefits. The pension plan administrator remains subject to all requirements under governing legislation and the common law including meeting its standard of care.

As mentioned above, a longevity risk hedging contract may be structured either as an indemnity-based insurance contract or a swap derivative. This structuring is very important as it will have implications for the applicable regulatory regime with respect to insurance compared to for derivative contracts, as well as tax implications. A contract of insurance would be regulated under provincial insurance laws while a derivative contract may be regulated under provincial securities law as well as insurance or banking laws that may apply to the counterparty.

Counterparties may transfer all or some of their assumed longevity risk by means of reinsurance agreements with one or more reinsurers. These reinsurers are often large global reinsurers who hedge longevity risk against their mortality risk portfolios. As a result, it is the global reinsurance industry that has been taking the lead in developing products for pension plans and insurers who are faced with longevity risk, and they can accordingly be an important driver of the pricing of longevity risk transactions. Generally, neither the pension plan administrator nor sponsor would need to be a party to these separate reinsurance transactions.

As a consequence of Canada's federal structure, private Canadian pension plans are supervised by either a federal or provincial regulator. We briefly discuss each of these regimes below.

### **Federally Regulated Pension Plans**

The Canadian federal regulator, OSFI, released a policy advisory (the policy) on longevity risk hedging contracts on June 9, 2014. In brief, the policy provides information and guidance to administrators of federally regulated pension plans who are considering entering into insurance or swap contracts to hedge longevity risk. The policy identifies the following risks associated with longevity risk hedging contracts:

- *Counterparty risk*—This is the risk that the counterparty will not live up to its contractual obligations, which may be mitigated through



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## LONGEVITY RISK HEDGING CONTRACTS ARE AN OPPORTUNITY FOR CANADIAN PENSION PLANS TO WORK TOWARD DE-RISKING WITH RESPECT TO LONGEVITY RISK.

collateralization or similar means, such as the taking of a security interest. The strength of the counterparty should be assessed including its credit rating and the regulatory regime governing the counterparty.

- *Rollover risk*—Where longevity risk hedging contracts are entered into for a shorter period of time than the liabilities covered, the cost of entering into a new contract may be greater as the actual mortality experience diverges from mortality expectations.
- *Basis risk*—This is the risk that an index-based longevity risk hedging contract may differ from the actual mortality experience of the pension plan. This risk would not occur in the case of an indemnity-based longevity risk hedging contract as payments from the counterparty are based on the actual experience of the plan.
- *Legal risk*—Longevity risk hedging contracts may be complicated and plan administrators should seek legal advice to fully understand the terms and risks.

The policy also provides that when considering a longevity risk hedging contract, plan administrators should consider the cost, acceptability pursuant to the plan's terms and Statement of Investment Policies and Procedures (the SIP&P), compliance with statutory requirements, administrative complexity, duration and liquidity of the longevity risk hedging contract, and implications on actuarial valuations.

Notably, the policy states that OSFI's view is that a longevity risk hedging contract is a permissible investment provided that it is consistent with the terms of the pension plan and the plan's SIP&P, that it complies with the *Pension Benefits Standards Act* and its Regulations, including Schedule III of its Regulations,<sup>3</sup> and that the plan administrator exercises proper due diligence. As well, there is neither a requirement that plan administrators obtain OSFI approval prior to entering into such a contract nor any specific requirement to inform plan beneficiaries of the existence of the contract.

In particular, the policy provides that plan administrators are expected to understand the impact of longevity risk on their pension plans, determine whether the longevity risk hedging contract is in the best interests of beneficiaries and offers value for the cost of enter-

ing into the contract, consider the risks and adequate controls and oversight, ensure that applicable laws are followed, and understand the longevity risk hedging contracts.

### *Provincially Regulated Pension Plans*

Canadian provinces have separate provincial pensions legislation and regulators. We have focused our discussion on Ontario and the Ontario pensions regulator, the Financial Services Commission of Ontario (FSCO). To our knowledge, none of the provincial pensions regulators, including FSCO, have issued formal written guidance on the use of longevity risk hedging contracts.<sup>4</sup>

Pensions legislation in most of Canada's provinces, including Ontario, incorporates the federal investment rules found in Schedule III by reference for pension plan "investments." The policy provides that it is OSFI's view that longevity risk hedging contracts are investments, and we would expect that FSCO and other provincial regulators would similarly follow suit. As discussed above, longevity risk hedging contracts have some similarities in their structure to buy-in annuities. Analogously, OSFI previously released guidelines on buy-in annuities, which provided that OSFI would consider buy-in annuities to be investments of a pension plan. Accordingly, we would expect that pensions subject to provincial regulation would also have to comply with the federal investment rules found in Schedule III when entering into longevity risk hedging contracts.

We would also anticipate that the expectations and guidelines of provincial regulators for longevity risk hedging contracts would be similar to the policy. Administrators of provincially regulated pension plans would also have to ensure compliance with requirements of provincial legislation and common law duties. In addition to the requirements as set out by the policy, plan administrators should also ensure that any trust agreements are complied with (or appropriately amended), and, finally, that the provisions of the *Income Tax Act* (Canada) are met, including the limitations on a pension fund's ability to borrow money.

## CONCLUSION

Longevity risk hedging contracts are an opportunity for Canadian pension plans to work toward de-risking with

respect to longevity risk. It is clear that while OSFI is watching longevity risk hedging contracts market developments, longevity risk hedging contracts are permitted in Canada for federally regulated pension plans. We anticipate longevity risk hedging contracts will similarly be permitted for provincially regulated pension plans and expect that Canadian financial institutions will be taking a closer look at the new opportunities offered by such products. ■

#### ENDNOTES

- <sup>1</sup> <http://www4.hrsdc.gc.ca/.3ndic.1t.4r@-eng.jsp?iid=3>.
- <sup>2</sup> [http://www.osfi-bsif.gc.ca/Eng/pp-rr/ppa-rra/inv-plc/Pages/bap\\_let.aspx](http://www.osfi-bsif.gc.ca/Eng/pp-rr/ppa-rra/inv-plc/Pages/bap_let.aspx).
- <sup>3</sup> Schedule III of the Pension Benefits Standards Act Regulations sets out investment restrictions on pension plan investments, known as the “federal investment rules.”
- <sup>4</sup> The authors have been advised verbally by FSCO that: “We are currently considering the issue of longevity insurance and longevity swaps for pension plans, but we do not as yet have a published position on these matters, and it is not clear when we will publish a position on these matters.”



# Interview With Steve Mannik, CEO Of General Re Life Corporation

By Reinsurance News

*Thank you, Mr. Mannik, for taking time out of your busy schedule to speak with us. Could you begin by telling us a little about yourself and General Re Life Corporation?*

My pleasure. I am an actuary and have worked in pension consulting, life insurance and reinsurance. I was a co-op student at University of Waterloo in 1978 when I started my career at Manulife Financial. I worked for Manulife in Toronto and the U.K. for a total of 18 years with an 11 year “break” in the middle when I left for pension consulting at Towers Perrin. In 2007 I was recruited to be the CEO of General Re Life Corporation (“GRL”) in Stamford, Connecticut.

GRL is the U.S. Life & Health arm of Gen Re, which is a global life and P&C reinsurer with \$6 billion of annual premium. Gen Re is a wholly owned subsidiary of Berkshire Hathaway.

At GRL we provide reinsurance support for a wide variety of products – individual and group life, individual and group disability, critical illness and Medicare supplement. We take pride in offering our clients tailor-made reinsurance programs combined with actuarial, underwriting, claims, and targeted research support that can help them achieve their life/health risk management objectives.

*What led you to the reinsurance industry and your current role at Gen Re? Were there any mentors that made a meaningful impact on your professional growth?*

I returned to Manulife from Towers Perrin in 1999 just as Manulife was demutualizing. For two years I worked in the mergers and acquisitions area. The highlight during this period was being a part of the team that negotiated the acquisition of 1.5 million in-force policies from Daihyaku Mutual of Japan in 2001. When that deal was completed, I was asked to run Manulife’s reinsurance business, which comprised life retrocession, accident and health reinsurance, financial reinsurance and property catastrophe retrocession. I started in June of 2001 and had a “baptism of fire” when 9/11 happened three months later.

Donald Guloien (current CEO of Manulife) was my boss when I left Manulife in 1988 and we stayed in touch while I was at Towers. He recruited me back to



Steve Mannik

Manulife in 1999 and he has been a mentor and good friend throughout my career.

*Gen Re, like many companies in the Berkshire Hathaway family, seems to have a very distinct style of management. What makes Gen Re different than other reinsurers?*

Our biggest difference is that our number one priority is underwriting / pricing discipline. We don’t waste time creating five year plans, and we have no top line or bottom line growth targets. We also have a flat management structure with very little bureaucracy.

The one financial success measure that we have is Combined Ratio. This metric is better known in the P&C world, but in simple terms it is the relationship of our annual underwriting income to our annual premiums written. Underwriting income is basically GAAP income less investment income.

Even though we are measured year to year, we really manage the business for the long term. Being a part of Berkshire Hathaway means that we don’t worry too



much about quarter to quarter results and this allows us to provide some unique reinsurance offerings such as short term volatility coverage.

***Many life reinsurers are seeking ways to grow, but Gen Re has always been known to have strict pricing discipline. How is Gen Re able to make this contrarian strategy successful?***

We are instructed to walk away from a transaction if the appropriate premium can't be obtained. Intellectually, everybody at Gen Re buys into this concept. But emotionally it's not so easy—everybody would like to see the business grow.

We make it successful through consistent messaging to associates and through appropriate monitoring and approval protocols. And it gets strongly reinforced each February as our overall bonus pool is tied to our Combined Ratio results.

***Big Data has become a popular topic of discussion across industries. How do you believe it will change the reinsurance industry?***

We are calling this Decision Analytics as there are applications that use both Big Data and Little Data.

I believe that Decision Analytics will create a sea change across the life insurance industry. It will touch many areas such as agent recruiting, agent effectiveness, customer acquisition, cross selling, underwriting and claims.

Because we don't interact with agents and consumers, reinsurers will focus their efforts more in the underwriting and claims aspects. We have the advantage of a broader reach since we do business with multiple insurers and this should allow us to bring some unique perspectives.

***Do you believe Big Data can reduce the amount of fraud currently present in the life insurance industry? Or will fraudsters continue to adapt to new analytical tools?***

Fraud will always be present in our industry, and as the STOLI wars have shown it can be a real cat and mouse game. New analytical techniques will most certainly

help combat fraud, but we will never fully eliminate it.

***Will new analytical tools change the way insurance is priced and managed? Should consumers welcome a change? What role can reinsurers play?***

The middle market for life insurance is underserved. To really address this, I believe that there needs to be a new paradigm that drastically simplifies multiple elements – distribution, product design, underwriting and administration. Some insurers are starting to try, but so far no one has cracked this nut in my opinion. Who knows, maybe it is going to take a non-traditional competitor like Facebook, Google or Amazon to really revolutionize the way that middle market life insurance is sold.

Decision analytics and reinsurers can certainly play a role in this, most obviously in the design of simplified or automated underwriting systems.

***What do you believe is the most pressing upcoming issue in the life insurance industry?***

I would say that lack of growth is the biggest issue, as it is the result of many challenges currently facing the industry such as:

- Low interest rates
- Lack of middle market penetration
- Aging (antiquated?) distribution
- Tax threats

***What are your priorities now? What are your plans for the future?***

The number one priority at Gen Re is underwriting/pricing discipline. We have also been looking to grow some of our specialized lines of business, such as volatility protection and Medicare supplement where we offer clients great support and value added services. Our back office has received a fair bit of attention as well. We are in the process of moving all of our reserving to GGY/AXIS and we are also overhauling all of our legacy processing systems.

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## **I SUBSCRIBE TO THE WORK-HARD/PLAY-HARD APPROACH. GIVE IT YOUR BEST AT THE OFFICE BUT ALSO MAKE SURE YOU CARVE OUT PERSONAL TIME. ...**

Going forward we will continue to focus on these priorities. Because of our pricing discipline it is unlikely that we will have a large market share in commoditized markets. But we will continue to look for ways to do business on the road less travelled.

An important part of our value proposition is our version of thought leadership—challenging our clients to think differently about their business, and providing them with technical and strategic insight to help them differentiate themselves in very competitive markets. Decision Analytics, Underwriting R&D, and Market Research are just a few of the tools we use to accomplish this.

*How do you personally create work-life balance? Do you have any plans after your tenure at Gen Re?*

I subscribe to the work-hard/play-hard approach. Give it your best at the office but also make sure you carve

out personal time for yourself, your family and your friends. It's certainly easier said than done for those with young children but when you get to my stage in life as an empty-nester it becomes much easier.

We have a second home in a golf course community in south Florida and that's where I will reside in retirement. However, I don't think I will ever fully retire. When my tenure at Gen Re comes to an end, I expect that I will keep engaged in the business world on a part-time basis through consulting or board work. Enough to keep mentally challenged, but not so much that I can't improve my golf game. ■

# ReRun At The SOA Annual Meeting Run, Walk And Network For A Worthy Cause

By Scott Selkirk and Carol Sullivan



Join the reinsurance community for the 10<sup>th</sup> ReRun for Charity at this year's SOA Annual Meeting in Orlando. This year, look for a new and exciting approach to ReRun: no getting up early on Sunday, no need for your workout clothes, easy for everyone to participate! Look for the special ReRun booth during the Expo on Sunday, Monday and Tuesday. We are cooking up something special for you. More information will be coming soon!

## RERUN

Over the last five years, ReRun has provided an opportunity for both actuaries and underwriters to increase awareness of, and support for, issues important to our industry while having fun and networking with each other. This year's conference location is not conducive to a fun run/walk, so we are trying something different. We will still have fun and increase awareness and raise money for people who need it most.

Florida is a great location for something tropical and exotic and a little wild! We will be raising money to support the Brain Injury Association again this year. We have a goal of raising \$10,000 this year. With more than 1,000 participants at the annual meeting, that is quite achievable.

Weigh in early with your support, go to [www.rerun4charity.com](http://www.rerun4charity.com) and make a donation today! Each person who makes a minimum \$25 donation online by September 30 will receive a special gift not available when donating on site.

## HOW IT ALL STARTED

In January 2009, Paul Schuster, senior executive vice president at RGA, approached several other reinsurance CEOs about coming together at the SOA Annual Meeting to host a charity run/walk paired with an education session. Not only was there unanimous support from the reinsurers but also from the SOA Reinsurance Section. Thanks to a tremendous response, the first ReRun was held that year in Boston, where 160 people registered and more than \$6,000 was raised for the American Diabetes Association.

Since then, the ReRun committee has organized two events each year, one at the SOA Annual Meeting and one at the underwriters' AHOU Annual Conference. Thanks to the generous support of actuaries and underwriters across our industry, ReRun has raised more than \$50,000 for five national charities.

ReRun is sponsored by: AHOU, Gen Re Life/Health, Hannover Life Reassurance Company of America, Munich Re, Optimum Re Insurance Company, RGA, SCOR Global Life Americas, SOA Reinsurance Section, Standard Life (Bermuda branch), and Swiss Re.

It's because of their support that 100 percent of your donations go directly to the selected charity. Again your donations in 2014 will go to the Brain Injury Association of America (BIAA). Our education session will look ahead to the 2015 charity and focus on the personal and professional aspects of cardiac disease. ■



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# 2014 Annual Meeting Reinsurance Sessions Preview

By Cathy Bierschbach



Cathy Bierschbach is VP & chief pricing actuary—Individual Products Division with Gen Re in Stamford, Conn. Cathy can be contacted at [cathy.bierschbach@genre.com](mailto:cathy.bierschbach@genre.com).

Planning for this year's Annual Meeting in Orlando is well underway. The Reinsurance Section Council will kick off the meeting by hosting a gathering from 4 to 7 p.m. on Sunday evening that will include a golf scoring challenge and beer tasting. We will also be hosting a hot breakfast at which Mark Prichard of NMG will showcase some of NMG's U.S. life reinsurance results, including shifts in market trends, perceptions of value, and reinsurance buyer preferences. He will also give a global comparative framework.

We will of course be hosting some informative sessions that do not include food and beverage for your continuing education needs. The section will be co-sponsoring five sessions with the Product Development Section and sponsoring three sessions. The co-sponsored sessions are:

- **Chronic Illness Acceleration Riders Parts 1 & 2:** Chronic illness acceleration riders attached to individual life policies have recently become more prevalent in the U.S. market. The first session will provide an overview of the riders, including the common product designs as well as considerations from an underwriting, admin, claims and reinsurance perspective. The second session will dive deeper into the pricing of these riders and will cover results of the SOA project regarding living benefit riders. Both the direct and reinsurance perspectives on pricing will be presented.
- **Post-Level Term Parts 1 & 2:** The post-level term analysis sponsored by the SOA in 2009 and 2010 was pivotal in understanding the importance of post-level term pricing assumptions and the policyholder behavior associated with those assumptions. The SOA has now completed a follow-up to this analysis that provides insight into how companies have changed their assumptions since the first publication as well as provides new experience results emerging from post-XXX term business. During the first session, a panel of experts will discuss the updated findings for the United States and the findings of a recently sponsored Canadian Institute of Actuaries (CIA) study. The second session will investigate how differing approaches

to the end-of-level-period pricing can affect short-term block persistency and profitability and will discuss the trends and thoughts behind some of the changes in the post-level world both for new products and in-force products from both a direct and reinsurance perspective.

- **Winning Strategies for In-Force Management:** This session will cover pricing and reinsurance strategies, and risk management techniques to address life insurance and annuity product in-force issues. Topics to be presented include, but are not limited to:
  - Life insurance and annuity in-force management issues in today's environment
  - Hedging and risk management techniques used in pricing in-force annuity blocks
  - Insights of things to look for to effectively manage your in-force life blocks
  - Reinsurance strategies to optimize in-force profitability management
  - Technology available to analyze in-force life insurance data.

For your added enlightenment, the Reinsurance Section will sponsor the following sessions:

- **Reinsurance Recapture Issues:** Recapture is not a singular topic. A recapture can be planned for a specific time, or triggered by events such as a retention increase, a premium rate increase, or perhaps a regulatory event. Even if a recapturable event does occur, a company may or may not choose to exercise its right. This session will discuss the reasons company recapture, factors that need to be considered when executing a recapture, the importance of treaty language, and possible ways to balance the interests of the ceding company and the reinsurer.
- **Reinsurance Treaty Construction & Terms:** This interactive session will discuss several different treaty issues and the valid, but sometimes differing,

views of the same issues. Similar to last year's session, the panel will consist of representatives from all three sides—direct company, reinsurer and retrocessionaire. This session will demonstrate why it is important to invest time into the treaty negotiation process to ensure that each party clearly understands the priorities and perspective of their counterparty.

- **It's Your Heart: The Latest Thought on Cardiac Risk and Why You Should Care Professionally and Personally:** This year's ReRun session will feature a panel of experts for insurance medicine and life underwriting. As we all know, cardiovascular disease is a major cause of death. Our experts will

provide their thoughts regarding heart disease in the population, its prevalence and prognoses. Attendees will gain valuable insights to consider when setting future expectations and when setting a path to a healthier life.

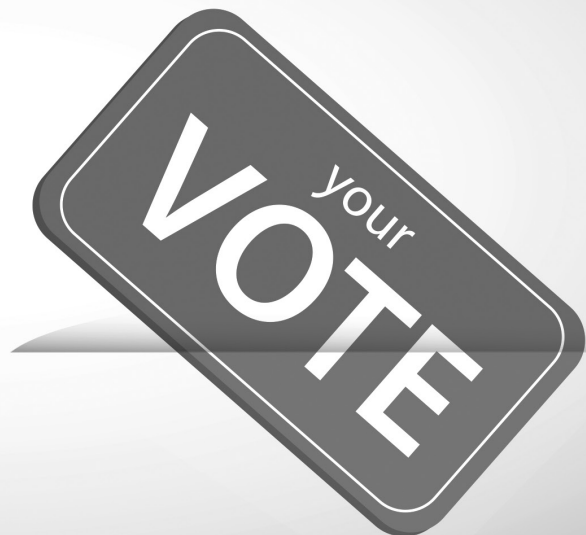
In addition to these great sessions, there will be over 100 other sessions available to meet your continuing education needs and desires. As always, remember that these sessions are the hard work of many dedicated volunteers, so please remember to be supportive so we can continue to count on them and hopefully more of you in the future. ■

# SOA ELECTIONS 2014

## CALLING ALL ELIGIBLE VOTERS

This year, elections open August 18 and close September 5 at 5 p.m. Complete election information can be found at [SOA.org/elections](http://SOA.org/elections). Questions?

Send them to [elections@soa.org](mailto:elections@soa.org).



# Columbia University Invades Bermuda

By Michael L. Frank



*Michael L. Frank, ASA, FCA, MAAA is President and Actuary of Aquarius Capital and an adjunct professor at Columbia University. Michael can be contacted at [Michael.Frank@AquariusCapital.com](mailto:Michael.Frank@AquariusCapital.com).*

In March 2014, students from Columbia University, Masters in Actuarial Science program participated in an educational trip to learn about the international insurance and reinsurance market. Students and faculty joined Michael Frank and Donald Rusconi (adjunct professors at Columbia and principals at Aquarius Capital) on an intensive educational trip with students meeting with 26 reinsurance companies and organizations supporting the insurance industry in Bermuda over a four-day period. In total, there were 15 participants from Columbia.

The meetings kicked off in Catlin's office on Monday, March 17 with a half-day presentation with students meeting ten executives at Catlin and learning all aspects of the business. Meetings ended on the afternoon of Thursday March 18 at Arch Capital Group with students again receiving a half-day presentation with students meeting 10 executives.

## AN INVALUABLE EDUCATION EXPERIENCE

During the four-day period, students met with more than 80 executives at 26 companies in the insurance industry including life, accident, health and property/casualty companies in Bermuda including CEOs, CFOs, Chief Actuaries, Chief Underwriters, Chief Risk Officers and other executives in the reinsurance industry.

Students were exposed to the following during their trip:

- Exposed to all aspects of the reinsurance business including marketing, underwriting, pricing, valuation, ERM, retrocession, claims management, cat modeling, operations, investments, regulations and other aspects of the insurance and reinsurance industry (and how actuaries interact in the day-to-day operations).
- Meetings at the different companies and received presentations from executive management of those organizations as well as one-on-one time meeting with different experts in the industry.
- Learned how insurance and reinsurance professionals from different backgrounds and specialties worked together to meet common objectives.
- Exposed to different technology and software tools that actuaries and reinsurance professions use to manage the business.
- Learned about the practical applications of enterprise risk management (ERM) in the day-to-day management of the business, including establishment of pricing and underwriting committees.

The presentations provided to students also covered trends in the insurance and reinsurance market, history of the reinsurance market, including Bermuda, and business plans of the various companies. Students also go to see sample test cases for underwriting, cat model-



ing, pricing and valuation (e.g., Tokio Millennium Re showed students application of different pricing and reserve valuation methods).

Students were also exposed to all types of reinsurance treaties including understanding the marketing, underwriting, pricing, auditing, claims management and legal involvement in the transactions. In addition to traditional reinsurance, students learned about the evolution of the captive insurance company market as well as cat bonds, insurance linked securities and Solvency II.

Students were provided additional insights and exposure to all levels of risk analysis on international basis and how Bermuda companies work with organizations throughout the world (e.g., U.S., U.K., Asia, Latin America, etc.), including marketing, evaluating and managing risk. Reinsurance companies discussed the impacts of the catastrophes in Japan and other Asian nations and its impact on the world's insurance economy. The different companies also showed how the science community and research are an important part of their business plan and managing of risk.

Various companies also shared details about their business plans including strategies on their new product lines and histories of their own organizations, including positives and negatives, and how they learned from the negatives.

## **BILTIR**

Students also attended a cocktail hour hosted by Bermuda International Long-Term Insurers and Reinsurers (BILTIR), which is an association formed in 2011 representing the long-term insurer and reinsurer group in Bermuda. BILTIR ([www.biltir.bm](http://www.biltir.bm)) membership has grown to 28 companies as of January 2014 and continuing to grow. Students met a variety of companies at BILTIR and had the ability to spend additional time with some of the companies that they previously met or will have met during their stay on the island. It was a great opportunity for students to network with industry professionals while expanding their understanding of the actuarial and insurance industry.

## **BFIS**

In addition to reinsurance companies, students also meet with the Bermuda Foundation for Insurance Studies (BFIS), which is an organization that offers scholarships and education programs to students interested in the insurance and actuarial profession. At BFIS ([www.bfis.bm](http://www.bfis.bm)), students were able to discuss the profession with some of the thought leaders in Bermuda on the education field for actuaries. BFIS also shared material including a textbook on the history of the Bermuda reinsurance market.

### *Importance of History in Bermuda*

The Bermuda reinsurance market is proud of its history and many of the executives were able to share various aspects of the history, including where their organizations fit in history. As college students and college graduates, we think of ourselves as part of a graduating class (e.g., I am University of Michigan graduating class of 1987). Many of the Bermuda reinsurance companies also recognize their origins so companies will identify themselves as the class of: Hurricane Andrew, Hurricane Katrina, 9/11, etc.

Every catastrophic event in the world (e.g., earthquakes, hurricanes, etc.) created a chain reaction in the reinsurance industry whereby losses in the industry generated a growth in the reinsurance market, especially in Bermuda. Students learned about the importance of these events as well as how the impact of experiences in soft markets and hard markets evolved the Bermuda reinsurance market.

Students were able to see firsthand how organizations had incorporated ERM into their everyday business practices and how ERM planning was critical for the ongoing success of the organizations in Bermuda and worldwide.

## **CAREER ADVICE**

Students received valuable career advice with professionals sharing countless stories and experiences. Students were also able to get a more global perspective of the insurance and reinsurance industry with many students able to get a better insight of the different

CONTINUED ON **PAGE 24**

aspects of life, accident, health and property/casualty reinsurance to help provide them a framework to make better career direction choices. Students also asked a lot of questions during the trip and the interaction of the students and executives was a great experience.

Students were able to relate experiences to many of the individuals that they met on the trip. With the Columbia actuarial program having students from more than 20 countries and 6 continents, the students were very diverse group. The Bermuda reinsurance market is equally diverse with students meeting executives from a variety of countries worldwide working together to meet a common objective. The 80 people that they met came from close to 20 countries.

### BEYOND REINSURANCE

Although the trip was scheduled to be a four day meeting marathon, several students stayed on the island to enjoy some of the touristy aspects of Bermuda. Some students even spent additional time meeting with companies that they met earlier in the week.

On a personal note, I was fortunate enough to experience this trip with my daughter (oldest of four kids), who is a sophomore at Fordham University and currently on spring break similar to Columbia. She joined me on this trip to Bermuda but did not attend any of the meetings other than the cocktail hour hosted by BILTIR.

Instead, she scouted out the island during the four day trip and identified a variety of activities and cultural events. The island has a large artistic and culinary community with my daughter meeting famous local artists as well as attending chef competitions (I was fortunate enough to attend a couple of events including the cooking competition). We met many local people in the culinary field, news media and artistic community with a mix of local Bermudians plus many transplants from other countries (e.g., UK, Canada, many other nations). All of them were very friendly and made the trip a great experience.

### TRIP ORIGINATION

The genesis of this trip began last year when a few students elected to go to Bermuda on Spring break and one of the students, Grace Feng Wu, contacted me while on break to see if we can introduce her to a company in Bermuda so that they can learn more about the market. These students had previously studied the healthcare and reinsurance system in Bermuda in class at Columbia taught by Michael Frank and Donald Rusconi, and it spurred an interest to visit Bermuda. (Bermuda was one of the 24 countries studied in Columbia class called “Global Perspective of the Health Insurance Market.”)

On very short notice, I had contacted Marc Grandisson at Arch Capital Group ([www.archcapgroup.bm](http://www.archcapgroup.bm)) and he and the team at Arch were willing to meet with students and the feedback of the trip was very positive from the students.

For the 2014 trip, the Columbia University Student Actuarial Club reached out to Ken Mitchell (Mitchell Actuarial Recruiting and an executive recruiter for Columbia University) and me to develop a similar trip for 2014. Ken and I reached out to the reinsurance community in Bermuda and the feedback and response was very positive.

### STUDENT PREPARATION

Prior to the trip, students were provided an overview of the international reinsurance market including an overview of the history of Bermuda reinsurance economy. Students attended seminars on reinsurance and also training specific to the Bermuda reinsurance market. The University also established educational sessions for students about traveling to Bermuda with focus on the cultural and business ethics specific to the country. The students also had the benefit of having two native Bermudian students that were in Columbia’s program participate on the trip.

The weather was in the high 60s/low 70s, which was ideal after roughing it during this past winter in New York. Other than some minor rain during on morning,



the weather was clear and sunny making traveling on the island easy with students walking to many of the meetings.

## THE FUTURE

Based on the experience and feedback from students, we look forward to doing future trips with students to Bermuda and hope to meet with the existing companies and additional ones so that students can expand their reinsurance knowledge and career development.

## SPECIAL THANKS AND ACKNOWLEDGEMENTS

On behalf of Aquarius Capital and Columbia University, M.S. in Actuarial Science, we want to thank the following organizations for their participation in this education program.

- ACE Tempest Life
- Aon
- Arch Capital Group
- Athene Life Re
- Axis
- Bermuda Foundation For Insurance Studies
- Bermuda International Long-Term Insurers and Reinsurers (BILTIR)
- Bermuda Monetary Authority (BMA)
- Catlin Insurance Company
- Credit Suisse
- Deloitte
- Ernst & Young
- Front Street Re
- Hannover Re
- Lancashire Group
- Liberty Mutual
- Montepelier Re
- Platinum Underwriters Bermuda
- PriceWaterhouseCoopers (PWC)
- Renaissance Reinsurance
- Safe Harbor Re
- Standard Life
- Tokio Millennium Re
- Transamerica
- Validus Holding
- Wilton Re

The hospitality that the companies above provided was extraordinary. We appreciate the reinsurance community's willingness to share their time and experiences with our students, especially the individuals and executives that their valuable time to educate and enhance the experience for the students.

Additional thanks to Donald Rusconi, VP & CFO at Aquarius Capital for his work in this joint effort, and to Noor Rajah and Lina Xu, faculty at Columbia University, for their assistance in getting things in motion and for trusting us to create a unique program for Columbia's graduate students.

In addition to the participating companies, we want to thank the other faculty and student services department at Columbia University (<http://ce.columbia.edu/Actuarial-Science>) for their assistance on this trip as well as some of the vendors and consultants used by Columbia. Additional thanks to the following:

- Renaissance Management, Inc. ([www.renaissancemi.com](http://www.renaissancemi.com)) for assisting and coordinating the trip and facilitating training for students prior to the trip.
- LICAS ([www.licasq.net](http://www.licasq.net)) for their assistance in communications technology support in order to manage and facilitate meetings
- Mitchell Actuarial Recruiting ([www.MitchellActuarialRecruiting.com](http://www.MitchellActuarialRecruiting.com)) for their assistance in reaching out to prospective companies that participated in the education forum for students.
- Sylvia Oliveira of Wilton Re Bermuda ([www.wiltonre.com](http://www.wiltonre.com)) and a board member of BILTIR for

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her assistance in recruiting participating companies and establishing a cocktail hour for students to meet reinsurance professionals.

- Grace Feng Wu, a graduate of the Columbia program, who helped set this trip in motion in the beginning of 2013, and encouraging the Columbia Actuarial Student Program to pursue this education trip during the students' spring break in 2014.
- Arch Capital Group for making the 2013 education trip a successful for the three students that visited Bermuda, which ultimately led to this larger trip involving 26 companies in 2014.

The number of people to thank on this trip between the Bermuda companies and those in New York to make this happen is over 100 people, so my apologies if I missed anyone. A special thanks to the Columbia University graduate students that went on this adventure to Bermuda rather than taking it easy on their spring break. The students were very engaging making this education trip a success. I look forward to future meetings.

## ABOUT COLUMBIA'S ACTUARIAL PROGRAM

Columbia University was founded in 1754 as King's College by royal charter of King George II of England. It is the oldest institution of higher learning in the state of New York and the fifth oldest in the United States. The Masters of Science in Actuarial Science program was formed in 2006. It is an 18 month intensive program with students taught by practicing actuaries and insurance experts. The program currently has 23 credentialed actuaries as faculty (3 full time and 20 part time professors).

Each fall, the program enrolls between 75 to 100 new students with students representing more than 20 different countries including the United States (approximately 30 percent), Bermuda, Canada, China, Cyprus, Germany, India, Italy, Japan, Korea, Spain, Taiwan, Thailand, United Kingdom, and many others.

The core curriculum includes classes to help students with the associate level exams for SOA & CAS plus

earn all Validation by Educational Experience. It also has specialty courses with more than 30 comprehensive electives focusing on topics including property/casualty, pensions, life insurance, reinsurance and health insurance with training in pricing, valuation, mergers & acquisition and other financial disciplines internationally.

As part of the curriculum, students attend regular (twice per week) seminars and training from industry experts in actuarial science and insurance/reinsurance industry and will be attending more than sixty (60) seminars by the time they graduate. This program is referred to as ProSeminar. Sample organizations that participate ProSeminar include AIG, Aon Hewitt, Aquarius Capital, Athene Annuity & Life, AXA/Equitable, Deloitte, Emblem Health, Marsh/Oliver Wyman, MetLife/ALICO, Milliman, NAIC, New York Life, Presidential Life, PricewaterhouseCoopers, Prudential Insurance, Société Générale, Society of Actuaries (current SOA President), Swiss Re and many others. Students also were able to attend presentations from world leaders and economists (e.g., Chief Economist of the China Banking Association).

Students are also mentored to develop critical business communication skills and presentations. Students also work in team environment and research with practitioners. Mentors come from a variety of backgrounds including former presidents of SOA, and active CEOs and Chief Actuaries of large insurance/reinsurance companies. Furthermore, many organizations (US and international) in the actuarial, insurance and banking industry have partnered with Columbia University Actuarial Program with more than fifty organizations providing internship programs to Columbia students.

Visit <http://ce.columbia.edu/Actuarial-Science> for further details of the Columbia program. ■

# Longevity Catalysts

By Khurram Khan

“Correct me if I’m wrong,” said a fellow commuter as we pulled out of London Waterloo, “but most insurance takes care of mini-disasters, doesn’t it? Bad outcomes, like your house burning down or your car being stolen.” He went on: “By purchasing an annuity you are guarding against the eventuality that you remain healthy and live for a very long time, which is something *you wish* to happen, a good outcome!”

This made me think a little, and it soon became apparent that this is only one of a number of features that make longevity risk (the risk that policyholders live longer than expected) strangely unique amongst the basket of risks taken on by a typical U.K. insurance company.

Unlike other risks, longevity risk is not directly “observable” as such. The occurrence or non-occurrence of other risks is much clearer by comparison. An assortment of sensory stimuli faithfully reveal their presence: Spread widening, yields down, inflation up, lapses, earthquakes, hurricanes and car accidents—right there

before our eyes, perhaps also on the news before making it to your local spreadsheet.

On the other hand, it is difficult to point to a “killer longevity scenario” without the benefit of prolonged hindsight following detailed data analysis, smoothing and noise elimination. The process has been neither instant nor particularly gratifying for annuity writers over recent times.

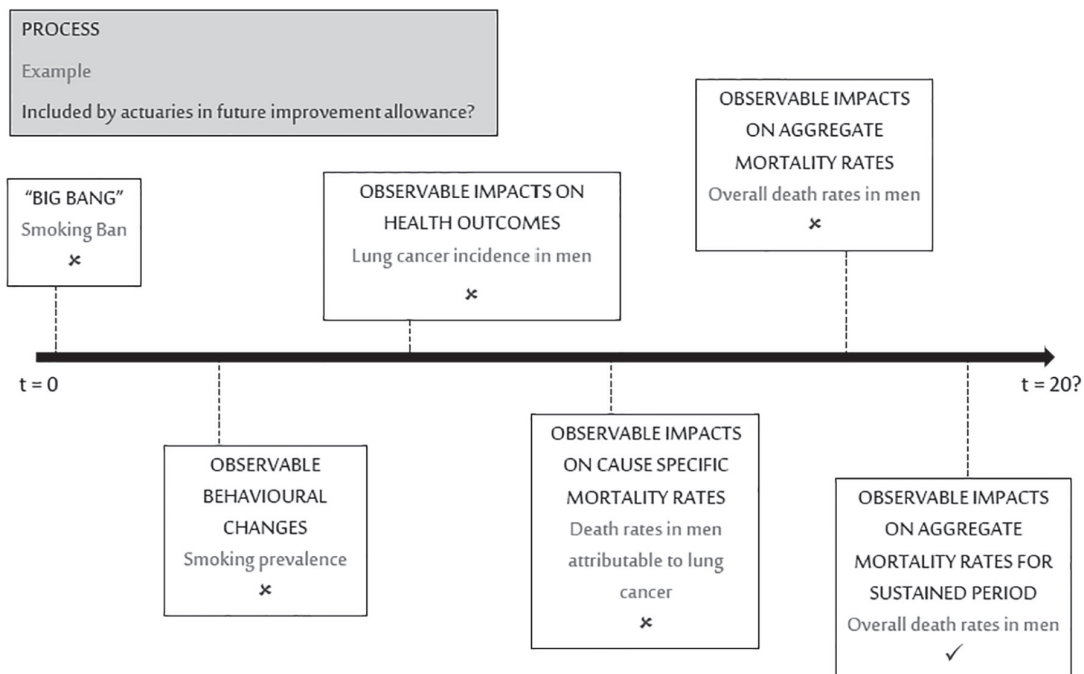
Most approaches to the measurement of future longevity trend risk are based upon the forward projection of historic death rates or mortality improvement patterns. This can be intuitively appealing and—once past data has been suitably smoothed using one of a number of available algorithms—visually attractive.

Past drivers of mortality improvements, however, are often unique or “one-off” in nature. There can never be another “birth of the NHS” or “introduction of screening breast cancer” or “breakthrough in surgical treat-



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Figure 1: The Anatomy of a Mortality Improvement



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## LONGEVITY CATALYSTS ARE ... INTENDED TO REPRESENT THE BUILDING BLOCKS, AND IT IS THE INGENUITY OF END USERS THAT ULTIMATELY WILL GOVERN WIDER USE.

ment of coronary heart disease” or “advent of warnings on cigarette packets.”

More importantly, perhaps, is the paradox that the latest, up-to-date death data merely represents the final signal emitted by longevity drivers at work decades earlier. In other words, it takes years for the forces behind improvements in mortality rates to finally reveal themselves in death data.

This “delayed recognition” is illustrated in Figure 1 on page 27.

That chart demonstrates that despite a number of “early warning indicators,” it is not until sustained effects are observed in (national population) data that a corresponding allowance for mortality improvements is typically made in actuarial assumptions. The use of “all-cause death data” rather than classifying according to broad cause of death can in some cases add to the masking effect.

This fundamentally reactive approach is perhaps one of the component causes behind recurring “Actuaries revise life expectancy assessment again” type headlines that have been common in the U.K. over the last 15 years or so.

### CAN WE DO BETTER?

The Longevity Catalysts Working Party has been set up by the U.K. Actuarial Profession (the Institute and Faculty of Actuaries) to answer one main, simple question:

“What future events are we aware of today whose occurrence is likely to be coupled with a significant impact on U.K. longevity?”

We refer to these as “Longevity Catalysts,” listed and described at [www.longevitycatalysts.com](http://www.longevitycatalysts.com).

Examples range in classification from socio-political (*like the introduction of plain cigarette packaging in the U.K.*) to medical (*such as the development of a universal influenza vaccine*).

They also vary according to timing, with some not expected to occur for perhaps many years (*like mainstream use of stem cell therapy for a number of ailments such as Parkinson’s disease*) to those that have occurred in the recent past (*such as NHS screening programs*).

The rationale for including recent, known events is founded on the principle (discussed earlier) that their effects may not be visible in death data for many years hence.

### HOW CAN CATALYSTS HELP?

This initiative seeks to form the foundation of an approach that is more forward-looking in nature and can coexist alongside current practice.

Consider for a moment a scenario in which a well-defined schedule of Longevity Catalysts exists.

How exactly could one make use of this?

Longevity Catalysts are merely intended to represent the building blocks, and it is the ingenuity of end users that ultimately will govern wider use.

A few thumbnail sketches of possible uses are provided below with more detail on the website.

#### *Assumption Setting*

The setting of best-estimate trend assumptions can also benefit by consideration of what (if any) Longevity Catalysts are (already) implicitly allowed for within a given trend assumption.

This can then also be used to formulate a framework that sets out how best-estimate assumptions might react following the occurrence of one or more pre-specified Longevity Catalysts.

This then gives a best-estimate assumption “framework” or “policy” setting out anticipated responses to real-world events rather than a single, infrequently changed point estimate.

### *Cause of Death Modeling*

Causal approaches have their advocates and opponents within the actuarial profession. To the extent that:

- They are used extensively by a number of practitioners (whilst acknowledging documented imperfections)
- They can be used to provide a wholly independent perspective (and thereby partially help to address the issue of “model risk”),

the Longevity Catalysts framework can help to directly inform projection pathways for deaths attributable to a given “cause.”

### *Risk-Based Capital*

One quirk of longevity risk-based capital (in the U.K., at least) is the requirement to assess the most adverse from a distribution of 200 possible outcomes over the following single *year*. Now, longevity trend risk plays out over a number of years, perhaps decades rather than 52 weeks. So, asking the “What’s the worst that can happen next year?” question is something of a conundrum.

On the other hand, Longevity Catalysts can materialize in an instant. They might also have a profound effect on post-event trend assumptions if not already anticipated as discussed above.

By considering what Longevity Catalysts (or combination thereof) could unfold over the next year, this framework can help the user to formulate an extreme collection of longevity switches that could turn to “ON” over the next 12 months. The increase in liabilities at the end of the year stemming from the resultant overhaul of longevity expectations then contributes to the longevity risk-based capital assessed over one year.

### *Monitoring of Key Indicators*

As shown in Figure 1, the transition from “Big Bang” to observable effects in the data is usually punctuated by a number of other signals. This can lead to “monitoring of key indicators” (such as *clear changes in smoking prevalence or early cancer diagnosis rates*) that can foreshadow associated effects in future emerging empirical data.

### *Hedging*

Well-documented drawbacks of finite term longevity hedges (based on an exchange of liability value proxies at the end of the term) can include basis risk and “roll-forward” risk but also “event” risk (the risk that one or more events over the term of the contract cause universal increases to longevity expectations but have no impact on the hedge payoff, which is based only on experience over the term)

The existence of a well-defined, objective and widely agreed set of Longevity Catalysts can provide a platform for addressing the last of these.

For example, the final payoff from a 10-year hedge could be structured so that it is (at least in part) linked to the occurrence of one or more Longevity Catalysts. Objective definitions thereof should lend themselves to simple unadjusted inclusion within legal agreements.

## WHAT ABOUT MORTALITY CATALYSTS?

The parallel but opposite concept of “Mortality Catalysts” also exists (*such as a political move to reform the NHS in the U.K., which ultimately leads to its demise*) and can be developed. One slight distinction is that the time lag between mortality catalyst trigger (*like the onset of an extreme pandemic*) and visibility in the data is likely to be smaller in magnitude than under the equivalent Longevity Catalysts paradigm.

## CONCLUSION

It is clearly impossible to foresee all future catalyst events that will significantly impact human life span, so any schedule of Longevity Catalysts will not capture all such possibilities and is thus imperfect. Yet this serves to illustrate the even greater imperfection of ignoring any future catalyst events that are now known—which characterizes the present situation for most practitioners. Furthermore, this addition to the actuary’s toolkit has a wide range of potential uses. ■

# Update On The LEARN Program

By John S. Cathcart and Jeffrey S. Katz



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*Jeffrey S. Katz is senior vice president with Swiss Re in Armonk, N.Y. Jeffrey can be contacted at jeffrey.katz@swissre.com.*

The LEARN (Life Education and Reinsurance Navigation) program began as the brainchild of Ronnie Klein, during his term as chairman of the Reinsurance Section Council in 2010. The purpose of the program was and still is to provide state regulators with a convenient means of obtaining the knowledge base needed to understand how reinsurance works.

The program currently has a pool of nine individuals who can serve as presenters to the department of insurance (DOI) of each state that is interested. There is no cost to the state other than providing a room for the presentation. Both life reinsurance and health reinsurance topics tailored to each state's needs can be covered, and either half-day or full-day sessions are available.

The presenters understand that different groups will have different educational needs, depending on the breadth and depth of their experience. Even within a group, there are different areas and levels of expertise. The audience among state regulators has included actuaries, examiners and an occasional visit from the commissioner or a deputy. We take this variety into account to the extent possible in developing LEARN content. We also make clear our willingness to answer questions or provide information beyond the LEARN session. Ultimately, the LEARN team wants to be viewed as the go-to resource for questions about life or health reinsurance.

The core curriculum includes such all-time favorites as kinds of reinsurance, reinsurance treaties, credit for reinsurance, and risk transfer. More advanced topics include statutory versus economic reserves, structured financing of redundant reserves, and principle-based accounting. Clearly, some topics go beyond purely reinsurance into more general actuarial topics. Ronnie's vision from the start intended to make such topics available as part of LEARN, as they are at times so closely intertwined with reinsurance concepts as to be an essential part of the knowledge we want to impart. Still, there are limits to what we can comfortably deliver, which we work through for each session with the group involved.

The various topics lend themselves to differing levels of detail, subject to further tailoring based on the needs of the audience. For example, the material covering the Credit for Reinsurance model law and regulation tends to be more of a summary. On the other hand, our presentation on risk transfer covers each point of the Life & Health Reinsurance Agreements model regulation. Other topics of interest the team has covered include cash flow testing, underwriting audits, reserve credit for reinsured policies with premiums paid in modes other than annual, and the Patient Protection and Affordable Care Act (aka Health Care Reform). We have also provided general information on captive reinsurers, while adhering to our principle of sticking to education rather than politics.

To date, a total of 20 presentations have been made to 24 states (one presentation involved five states). We are currently working with two more states and hope to do at least one or two more this year. We have also delivered compact LEARN sessions at a few industry events, such as the Life Insurance Conference.

The LEARN team has received positive feedback each time we've presented. Particularly in light of the budget constraints state governments face, the Reinsurance Section Council is assuring accessibility to LEARN by funding the travel expenses for the LEARN team when we travel to state DOIs. LEARN provides the presenters and the information, conveniently delivered to the regulators' location; all they have to supply is a room and an audience. Depending on the professional backgrounds of those who attend a LEARN session, continuing education credits may be available. This has been a secondary benefit for some attendees. However, the program is not designed specifically for that purpose, and the team does not intend to pursue certification for such credits. Having said that, we believe that the content meets the requirements for credit under both the Society of Actuaries' (SOA's) and the American Academy of Actuaries' approaches.

LEARN is focused on education. The team is not engaged in advocating positions on any issue. We rec-

ognize that at times we will discuss issues where there are open questions or even disagreements. In those situations, we attempt to explain differing views on an issue without taking sides.

The LEARN team has considered additional ways to expand to audiences beyond the initial set. One essential element in doing so is assuring that the quality of the program is maintained. Depending on the direction taken, we might need to cover additional areas of expertise requiring new team members. In any case, as we continue to schedule presentations, we would welcome additional members who feel they have something to contribute to the effort and who would value

the opportunity. If you resemble that description, please get in touch with John Cathcart. Those of us on the team have benefitted from developing the more thorough understanding of key reinsurance issues needed to serve as an expert presenter. We have also benefitted from gaining a first-hand view of issues our regulators consider important.

As a second pitch, the team would also welcome inquiries regarding 2014 and future LEARN sessions. If you know of a group that would benefit from a session, please let John Cathcart know, or provide my name as contact. ■

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# Regulatory Update

By Jeremy Starr

Ever since the financial crisis, the rate of change and the impact of the international regulatory community on insurers have been on the increase. Accounting standards for insurance contracts are under review by both the Financial Accounting Standards Board (FASB) in the United States and the International Accounting Standards Board (IASB) internationally. Another major development is that the International Association of Insurance Supervisors (IAIS) is developing a framework for how internationally active insurance groups (IAIG) should be regulated.

If that were not enough, there are also U.S. specific regulations being proposed that will have great importance to both direct writers and reinsurers alike. High on the list of controversial items is the methods companies are using to help finance redundant reserves on level term and universal life with secondary guarantees. States are starting to pass the 2011 version of the Credit for Reinsurance law and regulation that provides a way for non-U.S. companies to hold lower collateral to back reinsured reserves. Just as states were starting to adopt these changes, regulators have reopened their review of these collateral rules. In another review of collateral requirements, an old proposal relating to RBC, collateral and reinsurance has been put back on the NAIC's agenda. Another source of concern relates to the Social Security Master Death File (SSMDF). On the one hand, insurers in 11 states (with another six in various stages of potentially adopting the same requirement) are mandated to use SSMDF, but on the other, part of the Bipartisan Budget Act of 2013 places severe limitations on the access and use of SSMDF.

## INTERNATIONAL

In 2004, IASB issued the current standard for insurance accounting (IFRS 4) which in substance says that your home country's GAAP was acceptable for international purposes too. This has led to great confusion by analysts trying to compare two similar companies that are located in different jurisdictions. To remedy that situation, in 2007 IASB issued a discussion paper on preliminary views of a set of uniform insurance accounting rules. In that same year, FASB issued an invitation to comment on preliminary ideas about revisions to

insurance GAAP. In June of 2013 both the FASB and the IASB exposed their own versions of an Insurance Contracts proposal.

The comment period for both documents ended in October 2013. After reading through the comment letters, the boards held hearings with both users and preparers of insurance contract statements. Subsequent to understanding the comments received, the two boards arrived at very different conclusions. The IASB felt that since there is no common international standard, they must finish the project with adjustments based upon comments they received. FASB reasoned that the United States already had a good system of GAAP accounting and that only targeted improvements were necessary. FASB announced in April 2014 it would seek enhanced disclosures for short duration contracts such as: incurred and paid loss development tables, claim reserve duration in time bands, information about the frequency and severity of claims, plus a few other requirements. FASB has decided to take a different tact with long duration contracts. At that same April meeting, FASB said they would begin a process to review such items as: liabilities for future events (e.g., how often to change assumptions and how to book those changes), deferred acquisition costs (e.g., basis of amortization), premium deficiency and loss recognition (e.g., potential disclosures surrounding amount and assumptions used in calculating premium deficiencies), and revenue recognition (e.g., disclosure of amount of funds that may be returned to policyholders).

The IAIS has been working on a project to develop a common framework for the regulation of IAIGs (usually referred to as ComFrame). To be considered an IAIG, a company must have \$50 billion in assets, \$10 billion in premiums, write in at least three different countries and have at least 10 percent of premiums written outside their home jurisdiction. IAIS feels that these companies need a tailored and coordinated regulatory approach. ComFrame aims to make the regulation of IAIGs more comprehensive by developing effective coordination of the regulation of all facets and all jurisdictions in which IAIGs operate. The project has been broken up into three pieces. The first is to identify which companies are IAIG's and who the group super-



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visor should be. Next, the IAIS has developed a set of standards for what should be expected from IAIGs in terms of governance, risk management, etc. These standards are now entering the testing phase where IAIGs would implement ComFrame proposed standards. This process will last over several years, with an adoption of the final ComFrame, as modified by lessons learned during the testing. The final regulations would be issued in 2018. The last piece, commenced in 2011 and is targeted to be completed in 2015, looks at reviews of the group supervisor, establishment of regulatory colleges (e.g., group of regulators who all supervise a portion of the IAIG), enhance regulator capabilities to be more uniform world wide and possibly borrow from Dodd-Frank the idea of a “living will.”

## DOMESTIC

Ever since the *New York Times* (NYT) article that discussed life insurers use of captives to finance redundant reserves as shadow insurance companies, the NAIC has been working feverishly to develop a response. The NYT article expressed concerns that there were billions of dollars of reserves that, through some sleight of hand, whereby either the true amount of liabilities were not being held or that portions of the liabilities were not being backed by solid assets. To those in the industry, it was clear that the reserves under attack were those for level-term products and universal life with a no lapse guarantee (often referred to as XXX and AXXX reserves). The NAIC has released a white paper on the use of captives. More recently the NAIC hired Rector and Associates (the same group that helped develop the AXXX compromise—hereinafter referred to as Rector) to review the issue and make recommendations on potential solutions to the issue.

After Rector had discussions with regulators it became apparent that there was agreement that there was some level of redundancy in XXX and AXXX reserves, but once Principle Based Reserves (PBR) were adopted the redundancy would disappear. Rector released a brief report in September 2013, outlining broad principles and a final report in February 2014. The latter paper makes several recommendations, but holding reserves less than what the regulations require was not one of them. Rector has developed clear ideas for

a reinsurance solution, but is less clear about a solution that would allow an insurer to internally fund the redundant reserves. For the reinsurance solution, economic reserves would be calculated using a “modified” VM-20 (life PBR standard) reserve methodology called the “Actuarial Method.” An example of a modification to VM20 is to use a more current mortality table. Assets backing reserves calculated using the Actuarial Method (“Primary Assets”) would be cash and SVO listed securities that would be retained or held in trust by the direct writer. Reserves in excess of this level could be backed by non-traditional assets that were approved by the domiciliary regulator. Despite the reserves in excess of the Actuarial Method calculated reserves being backed by non-traditional assets, full RBC had to be held by the combination of cedant and reinsurer. The transactions would have more disclosure requirements to make it more transparent that these financing agreements were being utilized.

As a side note to this activity, the New York State Department of Financial Services (NYSDFS) has taken several actions. The Department developed a paper explaining, from their perspective, many of the problems with captive structures. As a result, it has banned these types of transactions in NYS and has tried to get other states to join their ban. They have also made it clear that they will not support the passage of PBR. The NYSDFS has combined these two concerns and have proposed a new way to reserve for level-term business. For the level-term period, NYSDFS has proposed using mortality improvement factors on the 2001 CSO of 1 percent from 2008 to 2047 and .5 percent thereafter. In addition, they have decided that the cost of putting term business on the books is much greater, proportionately, than it is for other types of business, so it will create a two year preliminary term reserve.

Another prong in the attack on captives is a new proposal to redefine a multistate insurer. Under the current rules, captives are excluded from the definition and thus do not need to meet all of the NAIC accreditation standards. The new definition would include all captives that write reinsurance covering blocks of business with policies from multiple states, with an exception for captives owned by non-insurers, and transactions

entered prior to July 1, 2014 and covering contracts dated no later than Dec. 31, 2014. If a reinsurance agreement covers business on or after Jan. 1, 2015 the portion of the agreement covering these risks shall be subject to the accreditation standards. Not only would that require captives to essentially become insurers, but it would sweep into this new regulatory environment captives that are doing transactions not involving XXX and AXXX policies.

In November 2011, the NAIC passed new rules that could reduce the amount of collateral reinsurers not licensed or accredited in the United States would need to hold if they complied with certain rules. The amount of collateral ranged from 0 for AAA rated reinsurers to 100 percent collateral for low rated reinsurers. To achieve the lower collateral, first the domiciliary country would have to be approved by the NAIC as having a strong regulatory environment. To date, four countries are well down the road to approval. They are Bermuda, Germany, Great Britain, and Switzerland. The law has been enacted in 19 states. In these states, a number of reinsurers have been certified to be able to hold lower collateral. In 2011, as part of the compromise to gain approval of the NAIC for the new collateral rules, it was agreed that the impact of the reduction in collateral was to be reviewed in two years. The NAIC plans to start this process later this year.

More than a decade ago, NYSDFS proposed that collateral should be posted for the RBC credit that a cedant obtains when it reinsures business. The proposal has been raised a few times again over the years and was brought up again last year. This time, however, NYSDFS invited a Canadian regulator, to an NAIC meeting, who explained that Canada already has this type of requirement in place. It remains to be seen if this proposal will gain traction this time.

Several years ago it came to light that insurers were using the SSMDf for determining whether annuitants were still alive. At the same time, these same insurers were not using the SSMDf for life insurance. Approximately 11 states have passed laws requiring insurers to use the SSMDf for determining if life insurance policyholders have died. Many companies have

paid large fines because they had not used the SSMDf for life insurance. In the December budget passed by Congress, there is a provision that severely limits who can use the file. Even some of those who can use the SSMDf under the new law, will be required to wait three years after a person dies to be able to learn of the person's death. Various industry groups and individual insurers are approaching rule setters to allow insurer's timely access to the SSMDf.

In this article a few of the various actions being taken by regulators both home and abroad have been highlighted. There are many other issues that are either in process or being planned for the future. It is important that your company find methods to stay informed and make decisions in the context of the evolving world of regulation. ■

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