INTERNATIONAL SECTION
"A KNOWLEDGE COMMUNITY FOR THE SOCIETY OF ACTUARIES"

ISSUE NO. 46
DECEMBER 2008

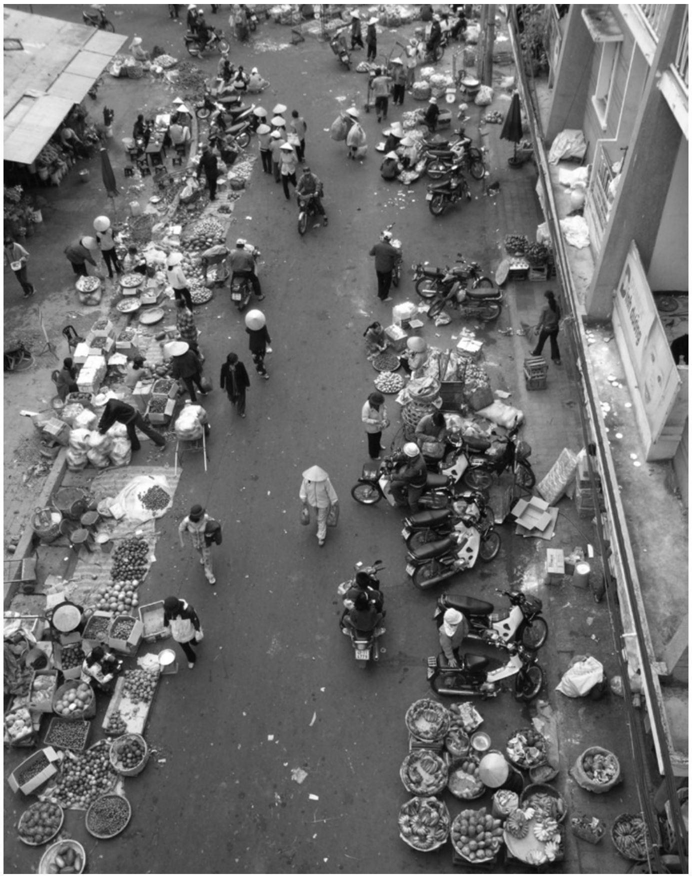
INTERNATIONAL NEWS

Vietnam: An Emerging Market, No Longer a War

by Nhon Ly

On Nov. 18, 2005 I left Canada for Vietnam, a twenty-something-hour flight crossing two continents, one ocean and 12 time zones. On November 20th, I finally arrived at the then small airport of Tan Son Nhat in Ho Chi Minh City. My suitcases in one hand, a life insurance product book in the other and my tennis bag across my shoulder, I was nervous but eager and ready to be reintroduced to a country where I was born but barely knew—I left it when I was five years old. I stepped outside, walking through an overwhelming, dense crowd of people waiting for their overseas Vietnamese relatives and friends, looking for my hotel pick-up. I realized that although my job to head the actuarial department of a start-up life insurance company would be a thrilling experience, it would be full of challenges as Vietnam has been—and still is—racing against time to catch-up for lost opportunities and to position itself in the current global market.

Vietnam went through years of economic slowdown during and after the war which ended in 1975. In recent years however, except during the Asian crisis at the end of the 1990s, it has mostly been in a growth phase since the "Doi Moi" started in the late 1980s. "Doi Moi" is the political and economic reform initiated by the Socialist Republic of Vietnam which allowed greater foreign direct investments, tourism and economic growth. In January 2007, it also became the 150th member of the World Trade Organization. This will allow Vietnam to further boost its trade and investments and get to the next level. Vietnam is changing as we speak and at high speed. You can feel the sense of urgency and eagerness of all these people as they zigzag through the city with their motorbikes. 30 million in the South with Ho Chi Minh City as its heart, 25



An outdoor market in Dalat

continued on page 5

contents

Vietnam: An Emerging Market, No Longer a War
by Nhon Ly 1

Editor's Note
by Michelle John and Carl Hansen 2

Chairperson's Corner—Farewell and Best Wishes
by Alex Kogan........ 3

SOA International Experience Survey—Embedded Value Financial Assumptions
by Charles Carroll, William Horbatt and Dominique Lebel........ 7

SOA Member Get-together and Life Insurance Seminar in Beijing
by Xueyun Huang........ 15

In and Out of Kazakhstan in Four Days in February
by Shiraz Jetha 16

The Consequences of Longer Lifespans: A Global Issue
by Ronora Stryker and Steve Siegel........ 19

Pension Fund Surpluses in South Africa
by Marius du Toit........ 24

BRAIF: A Model Beyond Pension Valuation for the Colombian Army Forces
by Rodrigo Silva........ 27

Latest Developments in the China Pension Market
by Ying Zhao and Li Shang........ 30

International News Announcements........ 33

International Section News
Issue No. 46 • December 2008

International Section of
the Society of Actuaries
475 N. Martingale Road
Suite 600
Schaumburg, IL 60173

ph: 847.706.3500 • f: 847.706.3599
Web site: www.soa.org

This newsletter is free to section members. Current-year issues are available from the Publication Orders Department by contacting SOA Customer Service at 888.697.3900. Photocopies of back issues may be requested for a nominal fee.

Editor's Note

by Michelle John

I have had tremendous fun working on the editorial team for the last four years but it's time to move on. It has given me an opportunity to blend creative leanings with technical actuarial skills. As we wrap up 2008, we'll "ring out the old, ring in the new," with Carl Hansen agreeing to take up the reins as editor.

I want to thank the rest of the team who supported me as editor, Carol Tom, Cathy Lyn and Carl Hansen. I have found it really rewarding to network with authors or potential authors who are all part of the international actuarial fraternity. You have been most gracious in accepting comments, suggestions on your articles and responding quickly to various requests from me. I hope these "e-mail friendships" will continue for a long time. The SOA publications team has also been invaluable. They deal with the headaches of laying out 30 pages of material and making it all hang together and look pretty.

I will continue to look out for my copy of the newsletter for updates on council activities and news from the international actuarial front. □

Michelle John, FSA, FCIA, FIA, is AVP at Sun Life Financial, Toronto, Canada. She can be reached at michelle.john@sunlife.com.

by Carl Hansen

The International Section Council would like to thank Michelle for her tireless leadership on the newsletter. I look forward to taking on the role of newsletter editor, and we also welcome Genghui Wu to the editorial team.

As you will read on page 23, we are once again running our Country Feature Article competition. We encourage all International Section members to submit articles to keep readers updated on what is happening around the world.

We have had many excellent ideas on the newsletter from those of you responding to the recent survey done by the International Section Council. We will incorporate as many of your ideas as practical in to future issues. This is your newsletter, so please keep the feedback coming! □

Carl Hansen, FSA, FCA, MAAA, EA is executive director of Abelica Global based in Seattle, Wash. He can be reached at carl.hansen@milliman.com

Chairperson's Corner—Farewell and Best Wishes

by Alex Kogan

As they say, time flies when you're having fun. It seems like only yesterday that I had the good fortune to be elected by International Section members to the section council.

Now, after participating as treasurer, vice-chair, and chair of the section over the past three years, I am writing my farewell article, with some fond memories.

I am pleased to report on a year of strong teamwork and good progress in serving section members in several areas, consistent with the plans the council laid out at the start of the year. The following are a few highlights of this year's council's activities:

1) The section began this past year with a full day planning meeting to review available resources, define key priorities, and affirm the section council's role to serve member needs. The International Section has the unique role within the SOA section structure of serving not a specific practice area, but a broad mandate to serve all practice areas with interest in international practice be they based in the United States Canada or in international locales around the world. This planning exercise helped set the stage for many of the projects completed throughout the year, and helped focus council activities given our broad mandate.

2) One of the fundamental findings from the planning meeting was a clear need to get an updated view on the needs of our diverse membership. I am pleased to advise that we have recently completed an updated survey of membership both within the United States and Canada, as well as International Section members around the world with an excellent response (over 350 members participated). The responses gathered are being analyzed and will provide a wealth of valuable information to ensure future council priorities are aligned with the input of section membership. A separate article summarizing the survey findings will be prepared for *International News*.

3) The section's efforts to further support and revitalize the international ambassador program have begun to show some positive results. The new funding program to provide up to $500 of funding per annum to help sponsor local in-country meetings for SOA members organized by international ambassadors has proven popular. There have been several requests for funding and several networking and educational events organized in multiple countries around the world, with particularly strong activity in South East Asia. The international ambassadors serve as a critical link between the SOA and its members based in international markets.

4) The section has continued to sponsor continuing education programs both in conjunction with SOA meetings in North America and in international locales. The International and Financial Reporting Sections' jointly sponsored series of U.S. GAAP reporting seminars were expanded this year beyond Hong Kong into Shanghai, China with continuous strong interest from SOA members worldwide in evolving financial reporting issues.

5) The section played an advocacy role on behalf of International Section members to make sure the unique needs of members based in international markets were considered within the implementation and development of the recently enacted SOA Continuing Professional Development (CPD) requirements.

6) Our section newsletter, *International News* has continued to publish high quality and relevant articles on actuarial issues and developments around the world. We continued our Country Feature Article competition to encourage high quality articles from members based in various international markets.

7) The council continued to support former section chair, Bill Horbatt's lead in further expanding the "International Experience Study" initiative to develop in country expe-

Alex Kogan, FSA, FCIA, MAAA, is vice president and chief actuary at AIG - Group Management Division in Wilmington, Del. He can be reached at Alex.Kogan@aig.com.

rience studies in international markets. A highlight this year was the first stage completion of the first industry mortality study in Vietnam, along with helping to host the Vietnamese regulators during their visit to the United States related to this initiative.

8) I am very pleased to advise that during our council meeting in Orlando, in conjunction with the SOA annual meeting, the section council elected a strong team of new council officers to ensure an orderly succession of leadership. With a positive team spirit, I am confident the new incoming council will build on the achievement of this year's council and further raise the bar for council support to membership in the coming year.

As I sign off and wish farewell to the council leadership and members for the coming year, it may be somewhat timely to make a brief comment about the profession's tagline: "Risk is Opportunity."

Given the volatile events in financial markets in the United States and around the world due to the global credit crisis, it's clear that "Risk" is not just an "Opportunity" but also a major "Responsibility" to multiple constituents that rely on the work of actuaries to ensure integrity of the products insurers sell and consumers buy. Despite the recent difficulties encountered around the world, I expect the "global" need for actuaries playing this "traditional" role of ensuring financial integrity of products and financials will continue to be in strong demand in the future.

Please feel free to contact me or any member of the section council should you have questions or suggestions on council plans. We welcome your input. ☐

Update on International Section Council Survey

In June 2008 the International Section Council conducted a survey seeking feedback from our members as well as non-members on the activities of the section as well as suggestions on how to better communicate and interact with our membership. We were encouraged by the volume of responses and the thoughtful input we received. We received over 350 responses from around the globe and the results show some clear areas for expanding on our meeting and seminar topics, more local SOA networking, and improved membership communication, all areas on which we will focus in the year ahead. In the next section newsletter we will share with you the final analysis and write up of the results of the survey as well as how your feedback has influenced the section council's plans for the year ahead.

million in Central Vietnam and 30 million in the North where the capital, Hanoi, is located. 85 million in total and more than half of them are below the age of 30. Several foreign university branches have already settled in to provide an international education to this new generation. Newer and taller buildings are popping up left and right in major cities to meet the office space and housing demands that well exceed the supply. The challenge for every business in Vietnam is how to tap into this dynamic and vibrant market.

The life insurance industry started modestly in 1996 with its first and only state-owned life insurance company. The first foreign life insurance company entered the market three years later and the tally is now at seven foreign life insurers with a few additional companies already confirmed to join sometime in 2008. The insurance industry is still in its infancy when compared to European and North American markets or even most Asian markets, especially considering that only slightly over 5 million of Vietnamese are insured (out of a total population of 85 million) and that the average annual premiums and face amounts are only US$200 and US$3,000 respectively, woefully far from where they should be. The insurance market still has tremendous potential and is virtually untapped.

A beach in Nha Trang

The insurance industry grew at a strong pace from 1996 to 2004 when most policyholders bought their life insurance policies through trust rather than need and understanding. Policyholders were less skeptical and had also less investment opportunities. By the beginning of 2005, the industry started going through a negative growth period which lasted up until the end of 2006. During this period, policyholders had other strong investment alternatives such as real estate, gold and stocks. The regulatory environment has also made it more difficult for life insurers. However, the industry got back on track in 2007 with strong growth for most life insurance companies. The negative growth period had forced the insurance industry to readjust and reexamine its role along with its strengths and weaknesses. It is the beginning of a new phase for the industry where the focus is no longer just on savings but it is also on risk protection. A wider (and better-suited) range of products are now available such as Universal Life, health protection and soon-to-be available Unit-Linked. In the past, simple savings products such as endowments and education were mostly sold. The industry has also focused on improving the quality of its service by having better training of its agents and customer service representatives. The insurance industry is heading in the right direction and is expected to continue its growth for the next several years.

Needless to say, it is a privilege to work in an emerging market and be part of its growth. It is truly exciting to be working in a country where sand dunes and beaches coexist with tropical flat deltas and forest highlands, with China right across the northern border, Laos and Cambodia across the western border and the South China

Nhon Ly, FSA, FCIA, is the chief actuary at AIG Life Vietnam in Ho Chi Minh City, Vietnam.He can be reached at nhon.ly@aig.com.

The white sand dunes in Mui Ne

Sea on the eastern border. But working in Vietnam, as in any young markets, comes with many challenges. The first and biggest challenge is adapting to the country, its people, its culture, its climate—basically getting over the culture shock. The first three months are the most difficult and there are numerous times—if not all the time—when you wonder if you can make it work. But thankfully, without knowing and realizing it, somehow you do.

Once you overcome the culture shock, a multitude of other challenges awaits you: the limited (five fully qualified actuaries at last count) and changing actuarial resources within Vietnam (none of the appointed actuaries that were here when I arrived are still in their respective positions), the lack of credible data, the regulatory environment, the image of insurance companies and the ethical sales of life insurance products and its consequences, to name only a few. During the first few months, I often wondered why I left my comfortable and familiar life but then I would remember why I came and how grateful I am to be part of all this. It has been a roller-coaster ride for me with its ups and downs and its twists and turns but it has been and continues to be a thrilling and unique experience.

After two years of working in Vietnam, images of planes dropping bombs, jungles on fire, Martin Sheen lying upside down with The Doors' songs playing in the background, Robin Williams screaming "Good Morning Vietnam," the "girl in the picture" running naked on a burning highway…all these images that my generation grew up with can finally rest in peace in the past where they belong. Vietnam is now living in the present with a roaring future. It is now one of the tigers of the Asian markets. Vietnam is currently the second fastest growing economy in Asia standing only behind China. Its stock market index grew by at least 20 percent each of the past four years and over 900 percent since it started in 2000, its GDP has been increasing over seven percent each of the last five years and foreign direct investment into the country has increased threefold over the last three years. Furthermore, Vietnam is the largest producer of cashew nuts and the second largest rice producer in the world, the third largest oil producer in Southeast Asia and a key producer of coffee, tea and rubber. Simply put: Vietnam is now known as an emerging market, no longer a war…and rightly so! ☐

Author's Note: This article was written a year ago and the economic figures herein do not reflect the recent global financial crisis.

SOA International Experience Survey—Embedded Value Financial Assumptions

by Charles Carroll, William Horbatt and Dominique Lebel[1]

Starting in 2003, the Society of Actuaries International Experience Study Working Group has been conducting surveys of published embedded value (EV) financial assumptions.[2] This article updates the survey with 2007 data.

Companies Included in Survey

Aegon	Allianz
AMP	Aviva
AXA	CNP
Fortis	Friends Provident
Generali	Hannover Re
HBOS	Industrial Alliance
ING	Irish Life & Perm.
Legal & Gen	Lloyds TSB
ManuLife	Munich Re
Old Mutual	Prudential UK
Standard Life	Swiss Life
Zurich	

The purpose of this survey is to provide international actuaries with benchmark assumption data. Since many companies make this information publicly available, no formal data request was issued. Instead, the survey was based on reports published on the Internet by 23 companies centered in Asia, Australia, Canada, and Europe—many of which are active internationally.

Each financial assumption presented in this article is the average value of the assumption reported by all companies in their 2007 embedded value reports. If no companies reported a specific assumption in a given country, then that assumption is labeled "NA" to signify that data is not available. Some companies vary assumptions by calendar year, while other companies use a single assumption; if a company varies an assumption by calendar year, the value for the earliest period is used in this study.

Financial Assumptions from Survey

Financial assumptions presented in this article include:

1. Discount rate—the rate used to calculate the present value of future distributable earnings.
2. Implied discount rate—for companies with market consistent embedded value (MCEV) calculations, the traditional embedded value (TEV) discount rate that would develop the same EV.
3. Equity return—the total return on common stock investments.
4. Property return—the total return on investments in real estate.
5. Fixed return—the yield on a corporate bond portfolio held by an insurance company.
6. Government return—typically the yield on a 10 year bond offered by the local government.
7. Inflation—the rate used to increase future expenses and possibly revalue policy terms that are tied to inflation.
8. Tax rates—income tax rates by jurisdiction.

Limitations

Readers should use judgment when interpreting the results of the survey and note that:

- When comparing one asumption to another, it should be noted that different companies might be contributing data to different assumptions, so that differences between variables may reflect differences between companies, rather than differences between the assumptions.
- Some cells include data from many companies, while others include data from as few as one company.

continued on page 8

[1] Dominique gratefully acknowledges the assistance of Nelson Lai of Towers Perrin's San Francisco office.

[2] SOA *International News*, Issue 34, October 2004 at *http://www.soa.org/library/newsletters/international-section-news/2004/october/isn0410.pdf,* Issue 36, July 2005 at *http://www.soa.org/library/newsletters/international-section-news/2005/july/isn0507.pdf,* Issue 40, *November 2006 at http://www.soa.org/library/newsletters/international-section-news/2006/november/isn-2006-iss40.pdf* and Issue 43, *November 2007 at http://www.soa.org/library/newsletters/international-section-news/2007/november/isn-2007-iss43.pdf*

These results are presented in two separate tables. Table 1 provides the number of companies contributing data as well as discount rates for TEV companies and the implied discount rate for MCEV companies. Table 2 contains the rest of the financial data.

When reading Table 1, several thoughts should be kept in mind:

- The methodologies followed by the companies to determine discount rates were as follows:

Methodology	Number of Companies
MCEV	12
CAPM	5
WACC	4
Other/Unknown	2

- A methodology is considered market consistent if each cash flow is valued consistently with traded instruments that display similar risks. Thus under the MCEV approach each cash flow is discounted using a risk discount rate (RDR) appropriate for valuing similar cash flows in the market. Some companies that use the MCEV methodology use a certainty equivalent approach, which assumes that all assets earn and all discounting is performed using the risk free rate. Other companies use "real world" asset assumptions, but adjust the risk discount rate such that the calculated EV is the same as it would be if calculated on a market consistent basis. Our definition of MCEV includes both types of approaches and is based on each company's publications.
- Companies following MCEV strictly speaking do not have risk discount rates that are comparable to those used by companies employing a more traditional approach. For companies employing an MCEV methodology, discount rates in the table above are the RDR inferred from the MCEV calculation. That is, they are discount rates that would develop the same embedded value using TEV technique.
- Companies that explicitly set discount rates are referred to as calculating traditional embedded values (TEV). Two common methods that such companies use to set risk discount rates are the capital asset pricing model method (CAPM) and a method which sets the discount rate based on the company's own weighted average cost of capital (WACC).
- Under CAPM many companies assume a level of volatility that matches the broad market (i.e., Beta is equal to 1), which results in a discount rate that is equal to the risk free rate plus an average equity risk premium. Other companies employing CAPM methodology may vary discount rates by product line to reflect the higher Beta associated with riskier business.

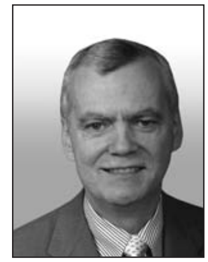
When reading this and other tables, it should be noted that some companies use identical assumptions for multiple countries (on the basis that this results in immaterial differences), and this practice would tend to dampen differences between countries.

Table 1: Average 2007 Explicit and Implicit Discount Rates

Country	Companies	Traditional Discount Rate	Companies	Implied Discount Rate (In Force)	Implied Discount Rate (New Business)
		(1)		(2)	(3)
Africa					
South Africa	0	NA	1	11.2%	11.2%
America Latin					
Brazil	1	16.8%	0	NA	NA
Chile	1	9.6%	0	NA	NA
Mexico	2	12.4%	0	NA	NA
Peru	1	11.1%	0	NA	NA
America North					
Canada	3	7.5%	1	6.9%	6.9%
US	7	7.4%	3	8.7%	8.5%
Asia / Pacific					
Australia	2	9.3%	1	8.0%	7.8%
China	4	9.4%	0	NA	NA
Hong Kong	3	7.6%	1	7.7%	7.7%
India	2	14.1%	0	NA	NA
Indonesia	2	15.2%	1	NA	6.9%
Japan	3	5.5%	1	7.9%	3.4%
Malaysia	3	8.2%	0	NA	NA
New Zealand	2	9.7%	0	NA	NA
Philippines	1	15.8%	0	NA	NA
Singapore	1	6.8%	0	NA	NA
South Korea	3	9.3%	1	6.8%	6.8%
Taiwan	4	7.2%	0	NA	NA
Thailand	2	11.2%	0	NA	NA
Vietnam	1	16.8%	0	NA	NA
Europe Central					
Bulgaria	1	7.1%	0	NA	NA
Croatia	1	9.4%	0	NA	NA
Czech	3	8.4%	0	NA	NA
Greece *	1	7.7%	0	NA	NA
Hungary	3	10.1%	0	NA	NA
Poland	4	9.2%	0	NA	NA
Romania	1	9.7%	0	NA	NA
Russia	3	9.0%	0	NA	NA
Slovakia	3	8.4%	0	NA	NA
Europe Western					
Austria *	1	8.0%	0	NA	NA
Belgium *	3	7.8%	1	8.7%	7.6%
Finland *	0	NA	1	7.2%	7.2%
France *	6	7.4%	4	6.6%	6.9%
Germany *	2	8.0%	3	6.4%	5.8%
Ireland *	3	7.6%	1	7.6%	7.6%
Italy *	3	7.1%	3	6.4%	5.8%
Luxembourg *	2	7.8%	0	NA	NA
Netherlands *	6	7.6%	0	NA	NA
Portugal *	1	8.0%	1	6.5%	5.5%
Spain *	4	7.5%	1	6.5%	5.5%
Sweden	2	8.0%	3	8.0%	7.8%
Switzerland	2	6.8%	1	5.8%	5.6%
UK	4	7.6%	2	7.3%	7.1%

* euro currency zone

continued on page 10



Charles Carroll, FSA, MAAA, FCA, is a consultant to New York Life Insurance Company in New York, N.Y. He can be reached at charles_carroll@nyl.com.

William R. Horbatt, FSA, MAAA, is a consulting actuary with Actuarial Consortium in Short Hills, N.J. He can be reached at Horbatt@ActuarialConsortium.com.

Dominique Lebel, FSA, MAAA, FCIA, is a senior consultant at Towers Perrin in San Francisco, Calif. He can be reached at Dominique.Lebel@towersperrin.com.

Several observations can be made concerning Table 1 when compared to similar data published last year: [3]

- Traditional discount rates continue to be generally higher than implied discount rates, but this is not the case for all countries (e.g., United States).
- More country-specific information continues to be provided for traditional discount rates than for implied discount rates while implied discount rates are more common in Europe than elsewhere.
- Both traditional and implied discount rates have generally increased from 2006. However decreases were most common in the United States and in some countries in Asia and Latin America.

The second table presents the balance of the financial assumptions used in embedded value calculations. Note that:

- Equity and property returns normally include both cash income (that is, stockholder dividends and rental payments) and asset value appreciation (or depreciation), and these returns may be reported net of investment expenses. Alternatively, equity returns may represent a fund appreciation prior to any fees or charges made against the fund. In all cases, equity and property returns will be influenced by company investment strategy.
- Fixed returns reflect the investments in an insurer's bond portfolio. Amortized book yields are typically used in countries where book profits are based on amortized book value, while current market redemption yields are used when profits are calculated using market values. Companies generally do not disclose whether the fixed income returns are net of defaults or investment expenses.
- The inflation assumption may differ from general inflation (for example, the increase in a consumer price index).
- Tax rates are dependent upon individual company circumstances (for example, the existence of tax loss carry forwards) and thus these rates cannot necessarily be applied to other companies.
- As discussed above, some companies that use the MCEV methodology use a certainty equivalent approach, which assumes that all assets earn the risk free rate. The data in Table 2 is based on "real world" assumptions, where available, not certainty equivalent assumptions.

Table 2: Average 2007 Financial Assumptions

Country	Companies	Equity Return	Property Return	Fixed Return	Government Return	Inflation	Income Tax Rates
		(4)	(5)	(6)	(7)	(8)	(9)
Africa							
South Africa	2	12.0%	10.0%	NA	8.5%	5.5%	34.8%
America Latin							
Brazil	1	NA	NA	10.8%	NA	4.0%	40.0%
Chile	1	11.0%	NA	7.4%	6.5%	NA	NA
Mexico	2	13.1%	NA	8.8%	8.6%	4.0%	40.0%
Peru	1	10.5%	NA	6.2%	6.0%	NA	NA
America North							
Canada	5	7.9%	8.6%	4.7%	4.3%	1.8%	32.0%
US	13	8.2%	6.4%	6.1%	4.5%	2.5%	34.6%
Asia / Pacific							
Australia	4	10.3%	8.4%	6.6%	6.6%	2.8%	30.0%
China	4	9.3%	5.6%	4.7%	5.3%	3.5%	25.0%
Hong Kong	5	8.6%	NA	5.9%	4.4%	2.3%	9.5%
India	2	12.8%	NA	8.0%	8.8%	5.0%	NA
Indonesia	2	14.1%	12.1%	NA	10.2%	6.0%	NA
Israel	0	NA	NA	NA	3.8%	NA	NA

3 ibid

Table 2: Average 2007 Financial Assumptions (cont.)

Country	Companies	Equity Return (4)	Property Return (5)	Fixed Return (6)	Government Return (7)	Inflation (8)	Income Tax Rates (9)
Japan	4	5.4%	NA	3.0%	1.9%	0.3%	36.0%
Malaysia	4	9.7%	5.8%	8.0%	4.9%	2.8%	19.5%
New Zealand	2	10.4%	8.5%	6.9%	6.6%	3.0%	NA
Philippines	1	NA	NA	NA	9.3%	5.0%	NA
Singapore	1	9.3%	NA	NA	4.3%	1.8%	NA
South Korea	3	9.9%	6.8%	5.6%	5.7%	2.8%	27.0%
Taiwan	4	6.9%	4.4%	3.9%	3.5%	2.1%	25.0%
Thailand	2	9.7%	NA	5.7%	6.0%	3.0%	NA
Vietnam	1	NA	NA	NA	10.3%	6.0%	NA
Europe Central							
Bulgaria	1	8.5%	NA	4.0%	4.0%	NA	NA
Croatia	1	9.8%	7.0%	NA	5.8%	NA	NA
Czech	3	9.0%	5.9%	4.6%	4.7%	3.0%	24.0%
Greece *	1	8.2%	NA	4.6%	4.6%	NA	NA
Hungary	3	10.7%	9.2%	7.0%	6.8%	3.0%	20.0%
Poland	4	9.5%	7.1%	5.7%	5.8%	3.1%	19.0%
Romania	1	11.1%	NA	6.6%	6.6%	NA	NA
Russia	3	7.5%	NA	5.8%	6.9%	3.0%	NA
Slovakia	2	9.0%	5.6%	4.7%	4.7%	3.0%	19.0%
Europe Western							
Austria *	3	8.4%	5.2%	NA	4.5%	NA	NA
Belgium *	7	8.0%	6.0%	4.8%	4.6%	2.1%	34.0%
Finland *	1	7.3%	6.3%	NA	4.3%	2.7%	NA
France *	11	7.5%	6.1%	4.8%	4.5%	2.4%	34.4%
Germany *	7	7.8%	5.7%	5.0%	4.6%	2.2%	29.9%
Ireland *	5	7.7%	6.0%	5.7%	4.6%	4.2%	18.2%
Italy *	8	7.5%	6.0%	5.2%	4.6%	2.3%	31.0%
Luxembourg *	4	7.8%	6.2%	4.7%	4.7%	1.9%	NA
Netherlands *	9	7.8%	6.3%	4.9%	4.5%	2.1%	25.5%
Portugal *	3	8.4%	5.2%	5.2%	4.7%	2.0%	26.0%
Spain *	9	7.9%	6.3%	5.0%	4.6%	2.2%	28.7%
Sweden	6	7.5%	6.4%	5.5%	4.6%	3.6%	29.0%
Switzerland	5	6.8%	4.1%	3.4%	3.4%	1.2%	22.0%
UK	9	7.8%	6.8%	5.6%	4.8%	3.3%	28.0%

* euro currency zone

Several observations can be made concerning Table 2 when compared to similar data published last year: [4]

- Equity, property and fixed income returns have generally increased from 2006. Most exceptions were in Asia.
- Government returns increased throughout most of Europe by about 0.5 percent, but were mixed outside this continent. Inflation generally followed government returns.
- Tax rates declined in some countries, particularly Germany (10 percent), Italy and Portugal (6 percent). Tax rates increased in some other countries, notably Malaysia (11 percent) and Brazil (6 percent).

Investment Premiums and Other Marginal Relationships

Investment premiums are the additional yield an investor is expected to receive by purchasing an asset other than a government bond.

- Equity Premium—the excess yield from investing in common stock over the return on government bonds.
- Property Premium—the excess yield from investing in real estate over the return on government bonds.
- Credit spread—the excess yield from investing in a mix of corporate and government bonds over the return on government bonds.

continued on page 12

4 ibid

In addition the following two marginal relationships may be of interest:

- Risk premium—the excess of the embedded value discount rate over the return on government bonds.
- Real return—the excess of the government return over inflation.

Table 3 presents the marginal relationships derived from Table 2. The column numbering continues the numbering in the prior table.

Table 3: Investment Premiums and Other Marginal Relationships

Country	Traditional Risk Premium	Equity Premium	Property Premium	Credit Spread	Real Return
	(10)=(1)-(7)**	(11)=(4)-(7)**	(12)=(5)-(7)**	(13)=(6)-(7)**	(14)=(7)-(8)**
Africa					
South Africa	NA	3.5%	1.5%	NA	3.0%
America Latin					
Chile	3.1%	4.5%	NA	0.9%	NA
Mexico	3.8%	4.5%	NA	0.2%	4.5%
Peru	5.1%	4.5%	NA	0.2%	NA
America North					
Canada	3.4%	3.8%	4.2%	0.7%	2.4%
US	3.2%	3.8%	1.9%	1.7%	1.7%
Asia / Pacific					
Australia	3.1%	3.8%	1.9%	0.0%	4.0%
China	4.2%	5.0%	0.9%	0.6%	2.4%
Hong Kong	3.3%	4.2%	NA	1.1%	2.1%
India	5.3%	4.5%	NA	-0.3%	4.3%
Indonesia	5.1%	4.0%	2.0%	NA	4.3%
Japan	3.7%	3.5%	NA	0.9%	1.3%
Malaysia	3.3%	4.8%	1.7%	4.0%	3.8%
New Zealand	3.1%	3.8%	2.0%	0.3%	3.5%
Philippines	6.5%	NA	NA	NA	4.3%
Singapore	2.6%	5.1%	NA	NA	2.5%
South Korea	3.5%	4.3%	1.1%	-0.1%	3.1%
Taiwan	3.7%	4.1%	1.8%	1.0%	2.2%
Thailand	5.2%	4.5%	NA	0.5%	3.8%
Vietnam	6.5%	NA	NA	NA	4.3%
Europe Central					
Bulgaria	3.1%	4.5%	NA	0.0%	NA
Czech	3.6%	4.2%	1.1%	0.0%	1.8%
Greece *	3.1%	3.6%	NA	0.0%	NA
Hungary	3.3%	3.9%	2.3%	0.2%	3.9%
Poland	3.4%	3.7%	1.2%	0.0%	2.8%
Romania	3.1%	4.5%	NA	0.0%	NA
Russia	4.1%	NA	NA	0.0%	NA
Slovakia	3.7%	4.3%	0.9%	0.0%	1.7%
Europe Western					
Austria *	3.6%	4.0%	0.9%	NA	NA
Belgium *	3.4%	3.4%	1.4%	0.3%	2.8%
Finland *	NA	3.0%	2.0%	NA	1.6%
France *	3.0%	3.1%	1.6%	0.3%	2.2%
Germany *	3.6%	3.3%	1.2%	0.4%	2.6%
Ireland *	3.2%	3.3%	1.6%	1.0%	0.3%
Italy *	2.7%	3.0%	1.6%	0.4%	2.3%
Luxembourg *	3.4%	3.2%	1.5%	0.3%	3.0%
Netherlands *	3.2%	3.3%	1.8%	0.5%	2.4%
Portugal *	3.6%	4.0%	0.9%	0.4%	2.7%
Spain *	3.2%	3.4%	1.8%	0.5%	2.5%
Sweden	NA	3.0%	1.8%	1.1%	0.5%
Switzerland	3.8%	3.7%	1.0%	-0.1%	2.3%
UK	3.0%	3.2%	2.3%	1.0%	1.4%

* = euro zone ** = calculated including only companies with complete data

A few observations can be made when comparing Table 3 to last year's results:

- Equity premiums generally increased from 2006, property premiums generally remained the same or increased from last year.
- Credit spread changes were mixed, with central Europe decreasing. Credit spreads are negative for some countries, which is counterintuitive.
- Risk premiums are generally consistent with equity premiums.
- Real returns increased in Europe, but were mixed elsewhere.

Please note that the data is relatively sparse outside of Western Europe and North America, so observations and conclusions could be different if additional data was available.

Stochastic Market Assumptions

A number of European companies are calculating the values of options and guarantees following stochastic approaches in order to comply with European CFO Forum guidelines for embedded value calculations. Thirteen of the 23 companies surveyed disclosed stochastic market assumptions in their 2007 European embedded value (EEV) reports. Averages of several of these assumptions are shown in Table 4 (volatility may also be referred to as standard deviation).

Table 4: Sample Stochastic Assumptions

		Stock		Property		Bonds		
	Companies	Yield	Volatility	Yield	Volatility	Yield	Volatility	Type
Europe	10	7.8%	24.1%	7.6%	14.8%	4.8%	7.5%	Government
Japan	2		22.8%			2.4%	7.3%	Government
So. Africa	1		25.4%			8.1%		Government
So. Korea	1		36.4%			6.1%	13.1%	Government
Switzerland	4		24.3%		17.4%	3.7%	10.5%	Government
UK	4	7.6%	25.1%	6.6%	16.3%	4.7%	7.6%	Government
US	8	7.9%	23.3%		20.4%	5.1%	9.0%	Government

Note that some companies reported volatility without reporting yields. Some companies determined volatilities from historical market experience while others measured the implied volatility in current derivative prices, which may result in significant differences between companies. Also, not all companies use consistent definitions for average returns (e.g., geometric vs. arithmetic).

Some observations can be made regarding stochastic and other elements of EV calculations this year:

- Companies generally consider 1,000 scenarios to be sufficient.
- A wide variety of interest rate models are used such as: 2 factor Black-Karasinski, 2 factor Heath Jarrow Morton, 2 factor Vasicek, Vector Auto Regression (VAR), TAS 9.5, 1 factor with mean reversion, Hull White Model, and the Barrie & Hibbert proprietary model.
- No consensus yet exists on how to reflect the cost of non-financial risk (NFR) in EV calculations. This is typically reflected in the discount rate for TEVs. Approaches include increasing the cost of required capital, explicitly calculating the cost of NFR using the difference between the value of inforce calculated using a risk free rate (RFR) versus a RFR plus a risk margin rate (risk margins varying between 0.5 percent to 3.5 percent) or ignoring NFR assuming it is already allowed for in the EV.

It should be noted that the CFO Forum published its MCEV Principles in June 2008. As a result, CFO Forum companies will be required to report the value of their business on a market-consistent basis. Adoption of the MCEV Principles will be mandatory by Dec. 31, 2009,

continued on page 14

at the latest. We expect that several companies will be making changes to their EV calculations and reporting 2008 EV results on a MCEV basis that is compliant with MCEV Principles.

Summary

The SOA International Experience Study Working Group (IESWG) publishes this survey to enhance the knowledge of actuaries about current international market conditions and practices. Practices continue to evolve and we wish to encourage an open discussion on appropriate methodologies and further disclosure of both assumptions and the thoughts behind their formulation.

The IESWG intends to update this survey annually. We invite additional companies to provide data, on a confidential basis, to be included in this and future surveys. Please contact Ronora Stryker (*rstryker@soa.org*) or Jack Luff (*jluff@soa.org*) at the Society of Actuaries for further information. ☐

SOA Member Get-together and Life Insurance Seminar in Beijing

by Xueyun Huang

On July 10^{th}, the SOA Member Get-together and Life Insurance Seminar was held in Beijing. We had sixty-two members register for this event and fifty-two members attend. It is not only the first organized event for Chinese SOA members in Beijing to meet each other and discuss industry issues but also the first activity of its kind for SOA members in China. As the China Ambassador, I really feel excited to be able to put together this activity for the benefit of the members here with the support of the International Section. What touched me most is the kind support and enthusiasm from those who not only actively participated in the seminar but also contributed their ideas about the topics to discuss. Among them, I would like to specially thank Shirley Shao, August Chow, Zhaolan Zhan, Ling-ling Wang, Daniel Lin and Shu-yen Liu. They were always there whenever I asked for help.

There were three sessions that took place during the seminar.

Session 1

Mr. Zhaolan Zhan, chief actuary of Happy Life Insurance Company, presented the Compilation of China Life Mortality Table (2000-2003). The China Life Mortality Table (2000-2003) is the second life mortality table for the industry and it has been 10 years since we compiled the first one. Mr. Zhan, who participated in the compilation of the first mortality table, led the team in working out the second mortality table. He introduced the database, methods and the whole process of working out the mortality table. He also presented some important implications derived from the compilation process, which are quite useful in pricing.

Session 2

Mr. Jing Guo, deputy director of Financial Regulation Division, Finance & Accounting Department at the China Insurance Regulatory Commission (CIRC), gave a speech on the newly approved China Insurance Solvency Regulation. Coincidentally, the CIRC held a news conference about the Regulation on exactly the same day of the seminar, so we luckily became the first audience to learn about the very important new regulations from the official who is in charge of enacting the Regulation.

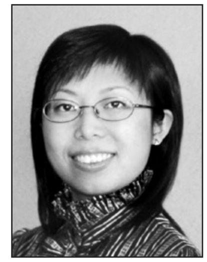
Session 3

Ms. Shirley Hwei-Chung Shao, chief actuary of China Life, the largest life insurer in China, gave a clear and informative presentation on important SOA initiatives: Basic Education Redesign, Continuing Professional Development (CPD) and the CERA credential. These are topics of common interest to most members. Shirley also shared her valuable experience in professional activities and what she learned from being a volunteer at the SOA. She called upon the attendees to actively participate in the volunteer work. At the end of the session, sixteen members signed up to be volunteers.

After the seminar, more than 40 members stayed for dinner. We were all very glad to get the chance to see new faces, make friends and have fun together.

The feedback collected from the attendees is quite positive. They think the topics that were discussed are closely related to their jobs and professional development. They all expect to have more events like this in the near future.

Activities have been expanded to Shanghai, where most SOA members in China reside, with a successful SOA member gathering. ☐



Xueyun Huang, ASA, is deputy director in risk management at China Life Reinsurance Co Ltd in Beijing, China. She can be reached at huangxueyun@chinalifere.cn.

In and Out of Kazakhstan in Four Days in February

by Shiraz Jetha

Shiraz Jetha, FSA, FCIA, MAAA, is an actuary at the Office of Insurance Commissioner in Olympia, Wash. He can be reached at SJetha@Nooractconsulting.com.

On Friday, Jan. 18, 2008 at 8:32 a.m. an e-mail hit my inbox informing me of a "volunteer" opportunity for an actuary to present a series of four lectures on "non-life" topics in Almaty for the First Actuarial School of the Kazakhstan Actuarial Society (KAS). The school was scheduled for the week of February 18 through February 22. All travel and other expenses would be paid.

At the time I had been a committee member of the Actuaries Without Frontiers (AWF) Section of the International Actuarial Association (IAA) for a whole two and a half months! My first reaction was "what a wonderful opportunity!" But then I realized that a volunteer actuary would have to be found, topics agreed upon, lecture prepared, handouts translated (into Russian), travel documents set up and lectures delivered—all in a month.

AWF is in its early stages of establishing an infrastructure to support volunteer activities including a database of volunteers which would have otherwise been very helpful in quickly screening the membership for availability and expertise, and linked with the KAS staff. With short time-span to the start date, a search exercise for volunteers did not seem feasible without a proper database.

As I forwarded the email to my AWF colleagues, I remember thinking that while I would have liked to put my name in the hat along with any others who we might have identified; the timing just wouldn't work for me. Besides, if I remember correctly, the daytime high in Almaty around that time of the year was a frigid 10 °F!

But it also did not seem right to turn the request down in view of the near impossibility of finding a resource. And so when one of the committee members offered to volunteer for the opportunity, it felt good. Over the next few days, this volunteer and the KAS official discussed and concluded that the lecture topic would be on the new and emerging area of Enterprise Risk Management (ERM). Shortly afterwards, work "got in the way" and the opportunity had to be turned down by the committee member. Anticipating no other volunteers or way to resource this initiative, I slowly put my hand up, hoping desperately that someone else would "dive in" before me. Before my hand was fully up, I was in! I still hoped that I would be able to wriggle out but as each day went by with e-mail discussions (negotiations) taking place over a 14 hour time zone difference, I quickly found myself one day having to choose between three flight schedules out of (and back to) Seattle.

After reluctantly accepting my fate, I worked furiously to prepare my lectures on two topics—"Introduction to ERM and Economic Capital" and "Non-Life Group Products in the United States." Each four hour lecture had to be translated into Russian. The handout material had to be sent a week in advance for translation.

Actuaries Without Frontiers (AWF)

AWF is a section within the International Actuarial Association (IAA). It started in 2003 and its mission involves enabling the provision of actuarial resources, on a voluntary basis, for short term assignments in mainly "actuarially emerging" countries. It has around 200 members from 23 countries with United States, United Kingdom, Canada, France, South Africa, and Japan being the main ones. Its main project to date has been resourcing a Community Medical Scheme for the very poor in India and it is presently entertaining a request for a series of lectures in Nairobi, Kenya in spring/summer of 2009.

Membership for the section is only $20. SOA members can easily include it with their annual dues. The section is working to establish a database of volunteers and donors and if the work of the section interests you, please consider joining and volunteering.

East West Management Institute

The First Actuarial School in Kazakhstan was co-sponsored by the East West Management Institute in New York; beyond their sponsorship of the event, their role involved working with the visiting lecturers in their home countries to ensure the completion of necessary paperwork, handling the travel arrangements and visa requirements and other related matters. Their involvement was so effective that it made the entire planning process for me, including the flight arrangements, go remarkably smoothly and thereby enabled me to spend my time focusing on what was important from my end—planning and preparing quality material for my assigned lectures. The tickets arrived by mail, my hotel was booked in Almaty and the visa was ready in time. I just showed up at Seattle-Tacoma International airport on the evening of February 18, and started my trip; my lectures were scheduled for February 21 and 22.

A Little About Almaty and Kazakhstan

The history of Kazakhstan is rich and dates back to the thirteenth century (and even earlier) when the country was part of the Mongol Empire. During the mid 1800s, the country became part of the Russian empire and later a state of the former Soviet Union; with the dissolution of the latter in 1991, Kazakhstan became an independent country, the largest in Central Asia (ninth largest in the world). The Silk Road, a trade route of much historical significance, linking the near east to China, passed through the southern parts of the country.

Kazakhstan has an estimated population of over 15 million in an area four times the size of Texas and is rich in oil. It borders China, Russia, Kyrgyzstan, Uzbekistan, Azerbaijan and extends to the shores of Caspian Sea in the East.

Almaty, in the south eastern part of the country at the foothills of the Zailliski Alatau mountains of the Tien Shan range, is the former capital of Kazakhstan and its financial, economic and cultural center. As would be expected, skiing is a major recreational activity bringing skiers from many European countries. With the growth that the city is experiencing, real estate prices have increased significantly and the cost of living is comparable to many European capitals.

View riding up the Chair Lift at Chimbulak ski resort, Zailliski Alatau mountains, near Almaty

The city intends to become a major business center for the Central Asia region. The insurance sector serves an important role in the economy in the Central Asia region since its beginnings in the late 1990s. KAS was formed in 2000 and was admitted as an associate member of the International Actuarial Association in October 2001.

Three Days in Almaty

At around 6:30 a.m. local time on Wednesday, my flight landed in Almaty where I was met by a representative from the KAS. I had been preparing for a very cold few days; however the weather had warmed up considerably and the outlook was for highs of around

continued on page 18

25. Thinking I had a day to catch up before my duties, I soon found out that there had been a glitch and the lecturer for the afternoon session on that day had not yet arrived. So, at lunch I was asked if I would mind exchanging my assigned time for the now open slot for the afternoon—which I did. The lecture was aptly titled, "Introduction to Risk Management and Economic Capital." My presentation was in English with simultaneous translation into Russian. The audience included professional and industry leaders from countries in the region including Tajikistan, Uzbekistan, Armenia, Georgia, Azerbaijan, Kyrgyzstan, Turkmenistan and of course, Kazakhstan.

On Thursday, my official duties were completed with a second four hour lecture session. That evening, with only one more day to go for the school, the KAS held a grand reception for the lecturers and the attendees. It was a memorable "Kazakhstan spiced" event consisting of a grand dinner and filled with informal speeches, gifts for the visiting lecturers, lots of dancing, beautiful music and songs from local artists, and generous portions of local spirit served in the special ambiance of Central Asian hospitality.

The following day, a sightseeing trip was arranged for me and a fellow lecturer—an actuary from Belgium—in the morning. In the afternoon, I was invited to address an MBA class at the Kazakhstan Economics University on the actuarial profession. This was followed in the evening by an invitation to all the attendees to a local opera performance and a dinner at a Chinese restaurant.

I left Kazakhstan early Saturday morning after three packed days several thousand miles from home. What is my regret? I wish I had had time to visit the other neighboring countries, particularly the historic cities in Uzbekistan. ☐

Seminar attendees, lecturers and officials of the Kazakhstan Actuarial Society at the Grand Reception Feb. 21, 2008

The Consequences of Longer Lifespans: A Global Issue

by Ronora Stryker and Steve Siegel

Since joining the SOA's research staff, I have been involved in two Living to 100 research symposiums. Each time that it occurs, I am surprised at the interest we receive from individuals outside the United States. Since its inception in 2002, the symposium has attracted presenters and attendees from such far away places as Spain, Japan, India, Taiwan, Hong Kong, and the Philippines. In the most recent January 2008 symposium alone, there were participants from over 15 different countries!

The fact that the symposium holds international interest, indeed, should not be surprising. When perusing the program, it is immediately apparent that the issues presented and discussed are not confined to the United States but are shared across the globe. For example, understanding how and why we age, measuring current mortality and projecting future trends as well as identifying potential advantages and risks associated with the increasing number of individuals living to advanced ages are just some of the topics covered at the 2008 symposium that have worldwide appeal.

Building on the success of the 2002 and 2005 Living to 100 events, the 2008 Living to 100 Symposium gathered together a diverse range of professionals, scientists, and academics for three days of multidisciplinary, interactive sessions ranging from multi-country perspectives on retirement issues and social security programs as well as emerging societal trends in India as a consequence of improved longevity to even biological breakthroughs that have lengthened the lifespan of the C. elegans worm and the potential implications to human longevity.

This article presents a brief summary of some of the thought-provoking presentations from the 2008 symposium. I hope it will also explain to readers why the symposium according to Event Co-Chair, Bob Johansen, "has achieved a position of international prestige among not only actuaries, but also demographers, gerontologists, government offices and others concerned with increasing longevity, its implications for the future and possible solutions."

The Elderly and Retirement Systems

Regardless of the region, increasing numbers of the aged are creating challenges and opportunities for many. Of particular interest to all attendees were those sessions highlighting significant issues for the elderly and how retirement systems might need to change in the future.

The decline in the popularity of traditional pension programs providing lifetime benefits in the United States and other countries have forced individuals to become increasingly responsible for managing their own retirement funds and making them last longer. A presentation by Anna Rappaport on Society of Actuaries research as well as other symposium speakers revealed that many workers and retirees do not plan long term, and there are significant gaps in knowledge on planning for post-retirement risks as well as the risks themselves. This information points to a need for products that can help retirees cope with impending risks that come along with greater longevity and increased individual financial responsibility. A few examples follow:

1. Longevity Insurance
2. Long-Term Care Insurance
3. Insurance providing health benefits that supplement public health insurance program benefits
4. Products that share risk in different ways, e.g., a product that guarantees a lifetime income but with some adjustment for aggregate mortality risk experience outside of a certain range.

The information presented at the symposium also led many attendees to conclude that individuals will need to work years longer than they have in the past in order to have enough resources to last a lifetime. In the paper presentation,

continued on page 20

Ronora Stryker, ASA, MAAA, is a research actuary with the Society of Actuaries in Schaumburg, Ill. She can be reached at rstryker@soa.org.

Steve Siegel, ASA, MAAA, is a research actuary with the Society of Actuaries in Schaumburg, Ill. He can be reached at ssiegel@soa.org.

"Retirement and Retirement Ages in Canada," Brian Burnell pointed out that major changes are needed to the traditional concept of retirement to allow for more flexible retirement arrangements such as phased retirement programs in which individuals can extend their working lifetimes often on a reduced workload basis.

Other presentations emphasized the impact of increased longevity on future financial conditions of social insurance and public retirement programs for older individuals. Countries around the world are considering increasing the minimum retirement or eligibility age of these programs to reflect mortality improvement experience of the populations and to mitigate future expected program cost increases.

An additional complication to funding these old age programs is that in many countries the programs are supported by employee/employer contributions. With increasing life expectancy and lower birth rates experienced in many countries, there will likely not be enough workers to support the future costs of these programs. Roberto Ham-Chande discussed challenges Mexico is facing in meeting the needs of its graying population and described how migration is among the factors changing the country's demographics as younger workers move to the United States leaving behind an increasingly older population.

While some symposium speakers considered reducing governmental program benefits or changing eligibility requirements for benefits received from the current framework, several sessions included discussion on the need for governments to enhance current program benefits to meet the needs of the growing elderly populations. Doug Andrews from Canada as well as Prakash Bhattacharya of India suggested providing increased governmental retirement benefits relative to current program structures to protect older individuals from financial hardship.

Measuring and Projecting Improved Survival

Projecting the numbers of future advanced age individuals is an essential component in assessing the financial solvency of public retirement and old age programs. The challenges of measuring high age mortality and the difficulty in securing reliable data to do so were important motivators for the first Living to 100 Symposium. These challenges persist.

In this regard, Dr. Jean-Marie Robine, a demographer and gerontologist who is probably best known as the co-validator of the oldest verified supercentenarian of all time, discussed the concepts of the compression of mortality and morbidity.

With respect to morbidity, the onset of disability has been pushed to higher and higher ages. Applied to mortality, this phenomenon can be observed when the shape of a graph of Life Table survivors by attained age for a recent year is compared with that from a hundred years ago. When viewed side by side, it appears that the curve has moved towards a rectangular pattern over time. This movement or apparent compression is sometimes referred to as "squaring of the lx curve." The implication of this trend is that increasing numbers of persons born in the same year are living similar, longer lifespans, further implying the potential for a fixed maximum lifespan. Robine concluded that there is probably a limit to the ultimate amount of this compression, and further conjectured on alternative patterns of mortality that may emerge. In either case, questions remain still as to whether or not a fixed maximum lifespan exists when viewed from the lens of mortality trends.

To truly gauge mortality trends, it is vital to measure mortality levels on a precise and consistent basis. Given the fundamental importance that measurement represents for all aspects of the study of longevity, the symposium included presentations from several of the world's leading thinkers in this area. Included among the topics discussed in the sessions on mortality measurement were data validation techniques and integrity checks. As in many other disciplines, accurate data is the fundamental building block and foundation for new breakthroughs.

The measurement of mortality also bears directly on the projection of future mortality levels. The need for mortality level projections that are thoughtfully developed cannot be overstated for many of society's key financial security systems. For instance, government social security systems around the world depend on solid mortality projections for planning purposes to ensure long-term fiscal soundness. In recognition of this, an enlightening session was held at the symposium with prominent actuaries from social security governmental agencies in the United States, United Kingdom and Canada, presenting their most recent mortality projections and methodologies. It was readily apparent from this session that these countries are contending with many of the same longevity issues that may ultimately challenge the long-term solvency of their public programs.

Extending Human Lifespan?

One of the objectives of the Living to 100 series is to highlight some of the latest research into the science of aging. The 2008 symposium led off with a spellbinding presentation by Dr. Cynthia Kenyon on her work with the C. elegans worm and the consequences of dietary restrictions on longevity. Through genetic manipulation, the normal two week lifespan of the worm has been extended to four weeks. Kenyon also raised a number of social and economic implications that would need to be addressed if such dramatic extension of longevity could be applied to humans.

While Kenyon's work focused on genetic manipulation as a way of impacting longevity, Dr. Leonard Hayflick, in a later session at the symposium, provided an alternative viewpoint on how this type of manipulation may affect the aging process in humans and its ultimate applicability—or, more accurately, inapplicability. Related to this, Hayflick further discussed a number of theories on the distinction between the biology of aging, the aging process and age related diseases. Kenyon and Hayflick's differing perspectives on the biological questions related to aging reinforced to attendees the complexity of the issues as well as the diversity of opinion in the scientific community.

Interesting Material for International Actuaries

Over 30 papers were presented at the symposium in addition to several panel discussions. While all papers are worth taking the time to read, the list below highlights papers and session material that may be of special interest to readers with an international area of practice background:

- Leonard Hayflick's "Entropy Explains Aging, Genetic Determinism Explains Longevity, and Undefined Terminology Explains Misunderstanding Both" which discusses the theory of aging.
- Papers presented in the session titled "Social Insurance Perspectives and Implications." These papers describe Social Security mortality projections for the United States, Canada and the United Kingdom.
- Papers discussed in the session titled "Longevity Risk Pricing."
- Eric Stallard's "Estimates of the Incidence, Prevalence, Intensity and Cost of Chronic Disability Among the Elderly" provides an insightful view into expected periods of retirement in various states of health.
- "Living to 100 and Beyond in Canada with Dignity" by Doug Andrews discusses issues of improving the lives of the elderly.
- Brian Burnell's "Retirement and Retirement Ages in Canada Revisited" explores the changing concept of retirement.
- "Micro Pension Plan: Indian Perspective" by Prakash Bhattacharya describes pension issues that are a by-product of the economy in India.
- "Challenges on Improved Life Spans in India—The Actuarial Implications" by N.V. Subramanyan
- "Is the Compression of Morbidity a Universal Phenomenon?" by Jean-Marie

continued on page 22

Robine, et.al. examines the conflicting health trends of 12 countries.

- "Economic Sustainability of Retirement Pensions in Mexico: Is There a Link with the Mexican Origin Population in the United States?" by Roberto Ham–Chande
- New Findings on the International Relationship between Income Inequality and Population Health" by Rob Brown and Steve Prus tests the hypothesis that higher levels of income inequality are directly related to lower levels of population health.
- Material from the session "Implications of Longer Life Spans: What Does This All Mean to Us" which describes the impact of increased longevity on a variety of financial systems and stakeholders.

Accessing the information

Complete versions of the papers and material described above as well as others produced for the symposium are available in an online monograph on the SOA's Web site at *http://www.soa.org/livingto100monographs*.

Final Acknowledgement and Thanks

The symposium organizers wish to thank the International Section for being one of the event co-sponsors. Planning has already begun for the 2011 event and the organizers would value any comments or suggestions for making this symposium as worthwhile as possible for actuaries with an international area of practice background. Please feel free to contact us with your thoughts. □

Nhon Ly celebrating his win with the actuarial team at a restaurant in Ho Chi Minh City

Dear Ambassadors and International Section Members,

It's time to for the 2007 Country Feature Article Competition Wrap-up!

The International Section Council sponsored another Country Feature Competition in 2007.

This competition provided you with a forum to share interesting facts, statistics or experiences that reflect your country's special qualities. Your article could be about any topic that you found informative and interesting. It might be about local actuarial organizations and activities, the actuarial profession in traditional or wider fields, financial products or the business sector in your country. The choice was yours!

The response generated 12 entries. The countries and regions featured were: Singapore, Switzerland, Bolivia, The European Union, The Bahamas, Colombia, China, Vietnam, Argentina and the United Kingdom.

The winner was announced earlier this year and the winning article is featured on the cover of this edition. Nhon Ly won with an article on the changes in the insurance market in Vietnam titled "Vietnam: An Emerging Market, No Longer a War."

A number of the entries were published earlier in 2008. This edition includes three more entries and there are a few more coming to print in 2009.

Thanks to all the participants for keeping us in touch with developments in your home countries through these great articles. □

Country Feature
Article Competition

The International Section Council announces our Country Feature Article Competition. Here is a chance for International Section members to win a cash prize. The PRIZE is US$2,000 for the writer and US$500 for the Ambassador who co-authors and/or sponsors the entry. If you are not an International Section member, join the section for US$25 and enter before Feb. 28, 2009. The winning article will be determined by the International Section Council.

All feature articles submitted will be published in the *International News*.

Markets vary by country due to such factors as local economy, regulations, consumer behaviors, social values and culture. The Country Feature Article Competition provides you with a forum to share interesting facts, statistics, or experiences that reflect your country's special qualities. We look forward to reading your entries.

Your article can be about any topic or topics that you find informative and interesting. It might be about local actuarial organizations and activities, the actuarial profession in traditional or wider fields, financial products, social security reforms, or the business sector in your country. It might be about a product and why it's successful or how it failed. It could be an industry event or a market situation. It could be a story or a statistical analysis. Perhaps the article would start with "Do you know that …?" or a list of "the top 10 reasons why you would want to be an actuary in my country." The choice is yours!

Please contact me or any council member should you have any questions regarding the following:

Eligible Authors:
• Any International Section member
• Ambassadors may ask someone to co-author and that person should be an International Section member

Rules:
• The write-up should be no more than four pages in length, using Microsoft Word and formatted in Times New Roman 12-point font.
• Photos, charts, tables or graphics are encouraged for illustration. Any photo sent should be in either .jpeg, .tif or .eps format with a print resolution of at least 300 dpi.

Deadline: Please e-mail your submission to Jill Leprich at jleprich@soa.org by Feb. 28, 2009. Please give full contact details for the author(s).

Selection: The Council will select a winner in April 2009, using criteria such as "I cannot put this down until I finish reading it," "That explains what I always wondered about XYZ," etc.

Award: The winning Ambassador/author will be announced in May 2009.

We look forward to hearing from you.

Sincerely,

Bosco Chan
Chair International Section

REGIONAL AMBASSADOR COORDINATORS:

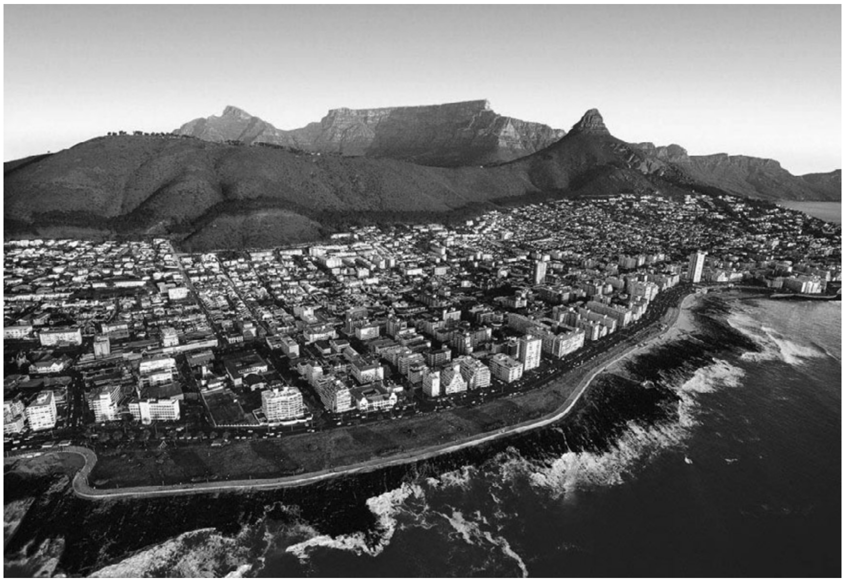
Asia, Australia and New Zealand
Joe Chou, FSA
ph: 215.448.5833
e: joe.chou@ey.com

Europe, Mid East and Africa
P. G. Alistair Cammidge, FSA, FIA
ph: 704.988.4729
e: acammidge@tiaa-cref.org

Latin America and Caribbean
Joanna Chu
ph: 212.458.3069
e: joanna.chu@aig.com

Pension Fund Surpluses in South Africa

by Marius du Toit



Marius du Toit, FASSA, FIA, is chief actuary at Financial Services Board, in Erasmusrand, South Africa. He can be reached at Mariusdt@fsb.co.za.

Introduction

During the course of many years up to December 2001, substantial surpluses accumulated in defined benefit (DB) funds in South Africa. It was estimated that in 1998 the amount of surplus in pension funds was approximately R80 billion. This figure included the surpluses in defined contribution (DC) funds, much of which was transferred from previous DB funds that converted to DC funds. To put this amount in perspective, the total assets in pension funds in 1998 was approximately R605 billion, which implies that the average funding level was in the order of 115 percent.

How Did this Surplus Arise?

Surpluses arose for a number of reasons, the most important of which are the following:

- Favorable experience of funds compared to the conservative approach generally followed by actuaries in setting assumptions. The most significant of these is the very high investment returns earned by funds during most of the 80s and 90s.
- Generally low level of withdrawal and retrenchment benefits in comparison with the accrued liability. In addition, there were significant movements of members from DB funds to DC funds or other arrangements. In 2001 it was estimated that as much as 80 percent of DB members had moved from DB to DC funds over the period from 1980 to 2000. Also, some industries contracted significantly, resulting in a large number of retrenchments.
- Pension increases had often not been as much as could be afforded given the excellent investment returns achieved.

Ownership of Surplus

The ownership of surpluses in pension funds had been a topic of debate since the late 1980s. Many people believed that all surpluses in a pension fund belonged to the employer, and could be utilised at will. The FSB Appeal Board determined in 1994 (the Lintas case) that surplus could be repatriated to the employer.

However, this view was being challenged increasingly. Following the determination in the Lintas case, the Pensions Advisory Committee investigated the payment of surplus assets to employers. They drafted a Bill that allowed payment of surplus to employers, after giving proper pension increases, increasing withdrawal benefits and obtaining the consent of 2/3 of members. Labour strongly opposed the Bill, and it was withdrawn from Parliament in 1999.

In another landmark case, the Supreme Court confirmed in a 1999 case (TEK vs. Lorentz) that:

- Neither the employer nor the members had any rights in law to the surplus and
- Any rights could only be established in the rules of a fund.

The rules hardly ever conferred any rights to any stakeholder, but merely a reasonable expectation to be considered. Rules of funds generally provided that:

- On liquidation, assets (including surplus), are distributed between members, including those who left the fund in the previous 12 months,
- Trustees had the right to improve benefits (subject to consent by the employer) and
- The employer could take a contribution holiday, since it was (normally) responsible to pay the balance of the cost of benefits in a DB scheme (in excess of the contributions made by members).

Discussions and Negotiations Leading up to the Surplus Legislation

In light of the substantial amount of surplus that had accumulated, it became necessary to create legislation that resulted in some certainty. Furthermore, former members had in many cases contributed to the surplus, and without specific legislation it would not have been able to confer any rights on them.

The matter was taken to National Economic Development & Labour Council (NEDLAC). NEDLAC is a representative and consensus-seeking body acting to reach agreement on issues of social and economic policy through negotiation and discussion. The parties involved are Government, organized labour, organized business, and organized community groupings. The retirement fund industry and service providers to that industry are not represented, and would have to channel inputs through one of the mentioned parties. Needless to say, both labour and business had strong opposing views on surplus.

Labour believed that assets were in funds for the sole purpose of providing benefits to members and their dependants, and that the employer had no right to repatriation of any surplus. Interestingly, from an actuarial point of view, they drew a strong distinction between paying money out of the fund through repatriation and not paying more money into the fund (i.e., taking a contribution holiday) if the fund was in surplus. Furthermore, they believed that past transfers were inadequate and did not reflect margins held to protect transferring members against market value volatility. As a result of keeping this margin, surpluses had been inflated at the expense of the transferring members. Funds should be forced to review those transfers. They wanted all past transfers, conversion and retrenchment benefits to be increased in proportion to the market value of assets over the actuarial value of assets, even if it meant that the fund would go into deficit. Furthermore, no surplus should be apportioned to the employer and any past use of surplus by the employer should be repaid.

Business, on the other hand, believed that the conservatism of actuaries led to the employers paying too much in the past, and that these over-contributions had been the major reason why surpluses existed. They supported repatriation of surplus to the employer. Furthermore, they felt that past transfers had been based on arms-length negotiations, and that they should not be revisited.

The discussions took place over a period of 18 months and by August 2000, it was clear that no agreement would be possible. Organized labour then demanded that Government should introduce legislation.

Principles Followed in Surplus Legislation

In drafting the new legislation, Government in essence followed a middle road, balancing the views of the opposing parties. The principles followed were:

- There should be a sharing of reward commensurate with the risk each stakeholder experienced.
- If the employer got a right to surplus, there should be a commensurate duty to fund any deficits.
- The surplus apportionment exercise should not cause a fund to go into deficit.
- A fair minimum benefit should apply when a member left a fund for any reason. This should take account of prevailing market conditions at date of exit.
- The employer should make good any inappropriate benefit it had enjoyed in the past.

Pension Funds Second Amendment Act, 2001 (Surplus Act)

The Bill was enacted on Dec. 7, 2001. The main elements contained in the Act were the correction of the past and introducing a minimum benefit regime, in order to prevent future surplus from accruing as a result of inappropriately low benefits.

The "sins" of the past were corrected through the following:

- The surplus must be determined at the surplus apportionment date, being the first statutory valuation following Dec. 7,

continued on page 26

In light of the substantial amount of surplus that had accumulated, it became necessary to create legislation that resulted in some certainty.

2001. The surplus apportionment dates would therefore fall between Jan. 1, 2002 and Dec.1, 2004, as statutory actuarial valuations are required at least once every three years.
- "Improper" use of surplus by employers must be investigated, repaid by employers and added to the surplus to be apportioned. These include usage of surplus by employers where it was not properly negotiated with all stakeholders, as well as use of surplus by employers to benefit certain selected individuals (executives). It covered the period from Jan. 1, 1980 (or inception of the fund if later) to the surplus apportionment date.
- If there was surplus to apportion, all historic benefit payments since 1980 must be evaluated against a minimum benefit as now defined, and where members had received too little, the benefit must be enhanced.
- Pensions must be increased up to the level of increases in inflation—given that they can be afforded.
- If former member benefit shortfalls and pension increases can be fully met, and there was surplus remaining, such surplus must be apportioned between all stakeholders, on a fair and equitable basis.
- It was recognized that there may be conflicts of interest in the surplus apportionment process, and hence a number of checks and balances had been built into this process.

It was also necessary to consider the future, in order to prevent an unacceptable build up of surplus. For this reason a minimum benefit regime was introduced in legislation. This provided that

- Minimum benefits must apply on exit from a pension fund. These are defined separately for DB and DC funds. In DB funds it is the present value of a deferred pension, based on prescribed assumptions, with a minimum of a member's contributions plus fund return. There was a commitment to negotiate the assumptions with the intention that they should reflect current market conditions and make provision for reasonable increases in earnings up to retirement age, and pension increases thereafter at levels in accordance with the fund's pension increase policy. In DC funds it is the accumulated member and net employer contributions, plus fund return.

- All DB funds (and DC funds with pensioners) must establish a pension increase policy. Pension increases must be linked to some measure of inflation. Every three years, pensions must be increased to compensate for inflation if this can be afforded based on the investment return earned on the assets backing the pensions in payment (irrespective of the pension increase policy).

It was accepted and anticipated that the cost of DB funds might increase substantially, so much so that employers might not be prepared (or be in a position to) continue with a DB fund. Hence a time period of one year after surplus apportionment date was allowed during which pension arrangements could be renegotiated without taking account of minimum benefit levels.

On termination of participation in a fund by the employer, if the market value of the assets is less than the minimum benefit level for all members and pensioners, the difference becomes a debt payable to the fund by the employer.

Conclusion

There had been a significant number of challenges in the surplus apportionment process. Whilst the intention of the Act was clear, there had been problems in interpreting the law. It resulted in a number of amendments to the Act, as well as pension fund circulars issued by the Regulator to clarify various aspects. This resulted in long delays, and even in 2008 there are still a large number of surplus apportionment schemes outstanding. In addition, the amount of surplus that will eventually be apportioned will be significantly lower than what was originally estimated. There are a number of reasons, the most important being the poor investment returns over the period to 2003, and strengthening of valuation bases due to decreases in interest rates and concerns over improvement in longevity at older ages.

Nevertheless, a large number of members and former members benefited from direct surplus payouts, and members and pensioners can be assured of a reasonable benefit in future. □

BRAIF: A Model Beyond Pension Valuation for the Colombian Army Forces

by Rodrigo Silva

Rodrigo Silva, ASA, is the manager of Asesorías Actuariales Ltda. in Bogotá Colombia. He can be reached at r.silva55@egresados.uniandes.edu.co.

In my actuarial firm, I had the opportunity to value the pension plan for the Department of Defense of my country, Colombia. In this article I'll address the model that we developed for the active uniformed personnel (AUP), which turned out to be an adequate way to describe the dynamics of the personnel and therefore, a reasonable approach to the pension valuation. It was also a useful planning tool.

In Colombia, the defense sector is composed of the Colombian National Police (CNP) and the Department of Defense (DOD, which has three forces: the Army, the Navy and the Air Force). Some of the pensions are from retirement institutes (pensions acquired after the personnel finish its military career and their survivor pensions), others are from the Police and the Department itself: disability pensions and some of the survivor pensions.

The pension regime for the AUP is a "quasi-defined" benefit, in the sense that if a given person is retired today, given his time of service since the moment he begun his career (there are different regimes), the pension can be calculated. Of course, no AUP knows for certain when he will be retired and therefore, the pension is not a "pure" defined benefit.

Developing a Common Language

The first challenge was to understand how their particular retirement system works and the rationale behind it. For example, the pension of the retired uniformed personnel (RUP) is named "retirement assignment" because at any moment, if circumstances require it, these personnel can be called to join the CNP or DOD. The behavior of their "retirement assignment" is the same as some of the components of the salaries of the AUP. In this sense, the uniformed personnel never hang up their uniforms—they can be active or quasi-retired.

The military forces have a pyramidal structure, for example, in the Army the ranks in decreasing order are: General, Major General, Brigadier General, Colonel, Lieutenant Colonel, Major, Captain, Lieutenant and SubLieutenant.[1] There are equivalent grades for the Navy and the Air Forces, similar to the ones seen in English speaking countries, but different from Commonwealth countries. In the DOD there are also professional soldiers (all are men), who have different legal regimes and benefits than the officers and sub officers.

The CNP was originally inspired by the French model of the "Gendarmerie Nationale" and of course, have different ranks than the DOD. In fact, given that even the civilian personnel that work in the CNP or in the DOD have ranks, pensions of these personnel must also be included in the valuation.

Any report from the CNP or the DOD about the AUP is always referenced in terms of ranks, which is not suitable for actuarial valuations. Therefore, we have to look for a way to convert these ranks to ages. We also had to "cut the pie" in order to get a common understanding about all the different groups, given the many divisions at the interior of the CNP and the DOD and the different legal regimes for the AUP. We designed a simple spreadsheet format in order that each division could report demographic data in aggregated form about their personnel. This is an ideal approach, as long as the data is anonymous and it does not interfere with the way each division handles the data.

It was an awesome experience to receive so many calls from different people asking about the way they manage their databases and the information that we required. I have to thank the patient and careful work of the planning divisions of both the CNP and DOD because there were times that we were flooded with information. After we were able to put everything together, we had to check if the puzzle that we finished had all the pieces, i.e., that we

continued on page 28

[1] http://en.wikipedia.org/wiki/General_Officer

were not leaving any group outside and that we were not repeating groups and of course, that the aggregated information made sense from many points of view: totals of people and payroll, averages, etc. The task of having complete information required many meetings, discussions and analysis.

Modeling the Dynamics of the Uniformed Personnel

According to the current laws, the active uniformed personnel are subject to many possible events in the future: disability, death and retirement. If an AUP becomes disabled or dies, the pension is from the CNP or the DOD, if none of these contingencies occur, someday the AUP will be retired or in military terms, will be called to "qualify services," it is also possible that in some circumstances, an AUP has to leave the forces without pension.

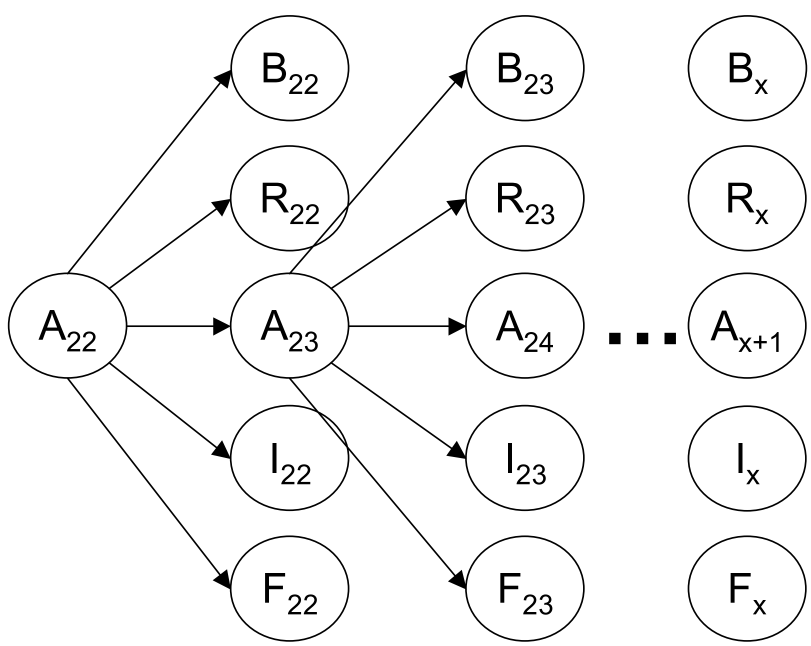
In order to describe the transition to the possible states that an AUP can face in the future, a model was proposed. We named it BRAIF for its initials in Spanish:

B: "Baja" meaning to be retired from the service without any entitlement.
R: Retirement under normal conditions.
A: Active. Meaning that the AUP will continue in service for one more year.
I: "Invalidez" in Spanish, disabled.
F: "Fallecer," to die. In fact, the possible causes of death are combat, mission and normal activity and depending on the cause, different survivor pensions will be recognized.

If for every age we can adjust the probabilities for these states, we can describe on a reasonable basis the dynamics of the AUP and for each possible path for each person (in fact, group of persons with similar characteristics), a probability can be assigned. If a terminal state (any of BRIF) is reached, an actuarial valuation is done, and after all the possibilities are taken into account, the whole valuation can be obtained.

By using this model, the terminal states are clearly identified and therefore, the reserve for each group of persons can be assigned to the corresponding entity for this future pension (in fact, "retirement assignment"). In other words, the model allows for the correct risk allocation.

If the adjustments that were made to calibrate the BRAIF model are correct, we can figure the probability that, for example, a Lieutenant of 28 years old could become a General in the future.



For an AUP of 22, the BRAIF model can be depicted as follows:

The state A was chosen to be in the middle, because it not only gives symmetry to this depiction, but is the state that puts the model in motion, it is from these states that transitions takes place.

This is a Markov chain—at any age the sum of the probabilities of leaving any of the A states are 1, the BRIF states are terminal and therefore, no more action (in terms of transition to other states) was considered after reaching any of them.

Thinking on BRAIF Terms

The probabilities of each arm of the BRAIF model are conditional probabilities, similar to the ones that can be obtained from a mortality table. This model can be seen as a mortality table with multiple decrements.

The picture of the model has a powerful effect, and illustrates the following points:

- The AUP behaves in a unique way, while they are in their military career. We cannot compare the dynamics of these personnel with any other group of personnel (at least in Colombia). In other words, we gave full credibility to the given data and the adjustments that we made.

- We don't know where any AUP will finish its career. Therefore, the obtained results are our "best estimate" of what will happen in the future, if all the uncertain future events evolve exactly as the model states.

Looking at the model that we made, we can not only get the valuation results as required by law, but also, planning can be done. If the model can project the dynamics of the AUP, it can also help to estimate the cost not only of the actual AUP but also the future ones, in terms of "retirement assignments" and salaries.

In the opinion of the planning division of the DOD, *"The BRAIF model had helped us to understand in an integrated way, the multiple possibilities that our complex regulation gives to the AUP, it can describe in a simple way the operation of the different legal regimes that the law offers, it conveys in an appropriate way, the dynamic of our AUP. I'm sure this model will help us to make better planning decisions."*

Looking at the model that we made, we have a description of a complete social security system. Like some other inventions that we have nowadays, this model was originally conceived for the military sector, but could also have civilian purposes—Social Security. Of course, the parameters should be different, but the idea of having a single model that describes the multiple benefits that are provided, is appealing.

For the future, we expect to improve the model. Some contingencies can be described in more detail, once some questions are answered. Many others arise, but thanks to a structured model, all of them can be answered. We expect to address all of them, with the aid of the common language that we developed for the BRAIF model. ☐

The probabilities of each arm of the BRAIF model are conditional probabilities, similar to the ones that can be obtained from a mortality table.

Latest Developments in the China Pension Market

by Ying Zhao and Li Shang

Ying Zhao, FSA, MAAA, is an actuarial officer at Sun Life Financial in Wellesley Hills, Mass. She can be reached at ying.zhao@sunlife.com.

Li Shang is the group product manager at Sunlife Everbright life Insurance Company in Beijing, China. She can be reached at Shirley.Shang@sunlife-everbright.com.

Introduction

In November 2007, for the second time, China Ministry of Labor and Social Security (MOLSS) issued a series of licenses to qualified financial institutions that participate in the supplemental pension market. The first time was in August 2005, one year later after the government started the major supplemental pension reform by introducing Enterprise Annuity (EA)—the second pillar of old age security system.[1]

Brief History

The Chinese government started pension benefit reform in 1991. In the 90s, discussions and high level policies about supplement year for pension benefits started to emerge. 2004 was a milestone year for pension reform. The government issued two major regulations defining EA framework. More regulations followed providing guidance on implementing EA for companies.

Market Forces

The supplemental pension plans have been growing substantially in the past a few years. By the end of 2006, over 24,000 companies had set up supplemental pension plans for about 9.64 million workers. The assets under management are about RMB 91 billion. As of September 2007, there is RMB 34.4 billion of pension funds under EA structure.[2]

Employer sponsored supplemental pension plans existed as additional benefits to employees long before the reform in 2004 but in a different format. Some major corporations or industries established their own fund, managed by self-selected fund managers; some provincial social security agencies (e.g., Shanghai) also managed supplemental pension funds for companies while managing basic social security funds. Another popular choice was a group annuity product provided by insurance companies. The estimated combined fund size of all three types was about RMB 93 billion as of the end of 2004. Under the new government policy, all supplemental pension plans should be transferred to the EA structure.

Currently, the biggest demand for EA is from large state owned enterprises (SOEs). These companies are controlled by the central government or government agencies who occupy critical industries such as energy, telecommunication, infrastructure, finance, and manufacturing. These companies normally generate very high profit margins and provide good benefits to their employees. They also follow government policy very closely and in many cases are the beneficiaries of economic reforms. These companies are in the process of transferring their old plans to EA or establishing EA under the guidance of the government policy.

China EA Characteristics

The current proposed EA structure in China is similar to 401(K) plans in the United States, with some unique characteristics due to the current policy and market environment.

- The plans are voluntary.
- The plans are sponsored by employers. Employees make contributions to their personal account with matching contribution from their employers.
- They shall be defined contribution (DC) plans.
- The tax treatment of EA plans is not particularly favorable. On the employee side, there is no tax exemption or tax deferral for EA contributions. Realized gains in the EA accumulation phase are not taxable as long as they remain in the plan framework. The income from the withdrawal phase is exempted from income tax, the same as the social security pension benefit. On the employer side, the matching contribution to EA plans is partially tax-exempted. Normally the contribution is tax exempt up to a limit. The rules are determined by the provincial government.

[1] The World Bank presented the idea of the "three pillars" of old age security in the 90s: basic social security benefits, employer sponsored supplement pension benefits and employees' personal savings.

[2] Released by MOLSS in November 2007 in a licensing announcement conference.

- Plan investment strategy is determined by fiduciaries following regulatory guidelines, and asset management companies make specific investment decisions. There are limitations for different investment vehicles. Each pension plan is managed as a whole with no difference among individual employees. As a result, most of the time, employees are not able to make their own investment decisions based on life cycle or risk preference.

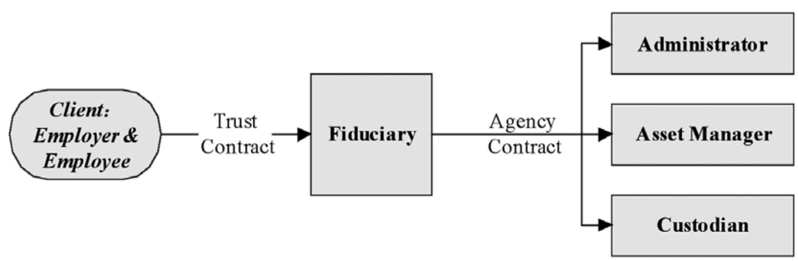
Table 1: Limitation on Investment Vehicles

Investment vehicles	*Limitation*
Short-term bank deposit, treasury bills, short-term bonds, money market	No less than 20% of net asset
Bank CDs, negotiable deposit, government bonds, corporate bonds, fixed income mutual funds	No more than 50% of net asset with no less than 20% in government bonds
Stocks, stock mutual funds, savings insurance products	No more than 30% of net asset with no more than 20% in stocks
Assets invested in a single fund or entity	On the market value basis, no more than 5% of the total asset of the bond or fund; no more than 10% of net asset

Players in the EA Market

Financial institutions have been working to enter the market since the opportunities emerged. There are four major roles in the EA system: the fiduciary, the custodian, the asset manager and the administrator. Players in the EA market have to be licensed by MOLSS. Qualified financial institutions may apply for more than one license and will need approval from MOLSS. The licensing process is not as transparent. The qualification requirements are subject to government explanation. So far, banks are the biggest winners in the licensing competition.

Chart 1: Relationship Among Service Providers of EA Plans in China



continued on page 32

Table 2: Licenses Distribution in Financial Sector

	Fiduciary	*Administrator*	*Asset manager*	*Custodian*
(November 2007) 24 licenses to 18 institutions	3 banks; 3 pension management companies, one of them was not invested by insurer; 1 trust company	3 banks; 4 pension management companies	3 fund management companies; 2 life insurance asset management companies; 1 pension management company	4 banks
(August 2005) 37 licenses to 29 institutions	3 banks; 3 fund management companies; 4 banks 2 pension management companies invested by life insurers; 4 life insurance companies; 9 fund management companies;	4 life insurance companies; 5 banks; 2 trustee companies	9 fund management companies; 2 pension management companies; 2 insurance asset management companies; 2 security companies	6 banks

Up to now, 61 licenses were given to 41 financial institutions. Five fund managers are joint ventures so far.

Looking Beyond

Since the EA system was initiated three years ago, significant progress has been made and yet there is still a long way to go before establishing a mature and effective supplemental pension system.

The market potential is huge. The World Bank estimated that the EA market will reach USD 1.85 trillion by 2030.[3] The Chinese government has also been actively involved in regulating pension reform introducing new policies and promoting EA system. A new corporate tax law took effect Jan. 1, 2008 in which more favorable tax treatments are applied to EA contributions.

International corporations and financial institutions have started to pay more attention to this market. As mentioned above, five licensed asset management companies are joint ventures. Lately, American International Assurance Company (AIA) showed interest in forming a pension service company with a Chinese partner. American Council of Life Insurance (ACLI) has also asked the Chinese government to simplify the licensing process in order to attract more participants from outside of China to this untapped market. □

[3] 2007 Q1 quarterly EA report from *www.cnpension.net.*

International News Announcements

IAA ASTIN Section Colloquium

Helsinki, Finland
June 1-4, 2009
www.actuaries.org/ASTIN2009/

IAA LIFE Section Colloquium

Munich, Germany
September 6-9, 2009
www.actuaries.org/Munich2009/

IAA AFIR Section Colloquium

Munich, Germany
September 8-11, 2009
www.actuaries.org/Munich2009/

IAA PBSS Section Colloquium

Tokyo, Japan
October 4-6, 2009
4thpbsstokyo.visitors.jp/

The Pacific Rim Actuaries' Club of Toronto

Founded in 1993, the Pacific Rim Actuaries' Club of Toronto (PRACT) was established for actuaries with an interest in the Asian Pacific region.

Our Annual Dinner Meeting will be tentatively held on Feb. 19, 2009, with an exciting speaker, Mike Lombardi, the former CIA president, who will be speaking on the International Accounting Standards.

The summer BBQ event will be held in summer, 2009 and several PRACT business workshops will be offered in 2009 as well.

For more details and most updated information on those events please keep checking our Web site: *www.pacificrimactuaries.com*.

Actuaries from all areas of practice are welcome to join our events.

In June 2008, the IAA published a Decennial Report which might be of interest to you—International Actuarial Association Decennial Report, A Profession Poised for the Future. The report can be accessed through the following link; *http://www.actuaries.org/ABOUT/Documents/Decennial_Report_EN.pdf*

SOCIETY OF ACTUARIES

475 N. Martingale Road
Suite 600
Schaumburg, Illinois 60173
Web: www.soa.org