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

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INTERNATIONAL NEWS

Importance of International Cooperation

by Hillevi Mannonen

It is my pleasure to highlight the current activities and future challenges of the International Actuarial Association (IAA).

Originally the IAA was established to organize international actuarial congresses. Over the years, it became evident that there was a need for a common forum of actuarial associations to discuss issues of mutual interest, to promote the development of the actuarial profession and to represent the global actuarial profession internationally. This led to reorganizing the IAA as an association of associations. Currently, the IAA has 56 Full Member Associations, 23 Associate Member Associations and three Institutional Member Organizations and it represents more than 43,000 actuaries in nearly 100 countries. I believe that in 1998 when the IAA took this visionary step not many of us could imagine the extent and the pace of global development that was to follow.

Global Market

The actuarial profession has always been fairly international. 2+2=4 everywhere! But in practical work the international aspect has become much more important than ever before. Globalization means global challenges, but also global opportunities, more open markets and convergence of insurance and other financial industries. An increasingly global market will require a worldwide prudential framework that will sooner or later touch each actuary in his or her professional life.

Two major areas where the presence of the international actuarial voice is now vitally needed are insurance regulation, in particular solvency regulation, and financial reporting.

Regulation will become more international and it will focus more on risks than the traditional models. Risk-based capital, risk-based supervision and overall risk management are key issues when ensuring the financial strength and sound management of an insurance company or of another financial entity. As actuaries, we should welcome this.

Driving the development of international financial reporting standards was the investors' need to have access to comparable information of companies. The present practices differ from country to country. This is not to say that a practice in one country is better than that in another country. We all know that actuarial problems can be approached from different angles and by definition there seldom is a unique best solution to a problem. The challenge is to make these different approaches converge to such an extent that sufficient comparability and credibility can be achieved.

To ensure that this global framework is consistent with fundamental actuarial principles, it is important that we, as a profession, offer our expertise to influence this development. In addition to the work of the national actuarial associations, we need one voice to represent the global profession. This is one of the main

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Actuaries
Risk is Opportunity.[sm]

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Editor's Note

by Michelle John

International Cooperation, Globalization, Convergence and the Global Village are some of the buzz words that have crept into our consciousness. Some have a negative spin while others sound more positive. In this edition, we explore these concepts as they relate to our profession and work.

Paul Grace looks at the international developments in the area of Continuous Professional Development (CPD). An actuary may be working in one country, for a company that reports to a regulatory body in another country and neither of these countries may be his country of qualification. Which CPD Scheme governs? Hillevi Mannonen, International Actuarial Association (IAA) president, highlights the activities and challenges of the IAA. It provides a common forum for discussion among actuarial associations. Catherine Robertson provides the first in a series of articles on changes in Pension Accounting. These articles will describe the first steps taken towards convergence to a global standard. The International Experience Study Working Group has updated the Embedded Value Financial Assumptions survey for 2006 data.

Working together is not possible if we don't understand the various markets in which we are to operate. Nian Chih-Yang explores the Chinese insurance market, Greg Whittaker looks at the role of actuaries in road accident claims in South Africa and Edina Rozinka provides an extensive review of the insurance market in the Czech Republic, Hungary, Poland and the Slovak Republic.

Apart from this, Alistair Cammidge, council member, shares his thoughts on what is happening in the world of pensions and Shani Bryan provides an update from the Actuarial Society at the University of West Indies in Jamaica.

2007 is winding down, as we look forward to 2008; a number of changes are taking place. Carol Tom, assistant editor, has decided to bow out after diligently editing for the last two years. I would like to thank Carol for all her hard work and dedication. We welcome Carl Hansen to the team; he will be the assistant editor in 2008. The council elections have taken place and there's a new team in place.

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With 2008 coming, here are a few suggestions for your 2008 New Year's resolutions.

- Write an article for the newsletter.
- Introduce yourself to your SOA country ambassador. There isn't one? Why don't you apply then?
- Admit to your friends and family that you enjoy reading this newsletter. You may be shunned for awhile—that just gives you more time for reading the newsletter. □

Chairperson's Corner

by Frank Buck

My term on the International Section Council ends at the annual meeting, so this will be my last column as chair. It has been a privilege to have served the membership and I will be leaving the council in good hands.

This year we have started to address the role of ambassador. Many of our overseas representatives perform a useful role for our members, but some, after a promising beginning, run out of ideas and do very little. The council has decided to play a more active role by requesting progress reports and, where necessary, updated action plans. Starting this year, we will reappoint ambassadors performing well and will seek fresh talent elsewhere.

The US GAAP seminar held jointly with the Financial Reporting Section continues to do well. For the second year, we had a full house in Hong Kong and did well in Brazil. We are planning the next seminar in Amsterdam and expect to return to Asia next year.

The coverage of the International Experience Studies System continues to expand in Asia. We have more companies sharing data in Korea and Taiwan and expect to start discussions soon with companies in Thailand. After that, we will go to Vietnam, if we can get through some regulatory red tape.

International News continues to contain many impressive articles from around the world. I think that it is consistently the best of the section newsletters and this is in no small part due to the efforts of the editorial team, Michelle John, Cathy Lyn and Carol Tom. On your behalf, I would like to extend our thanks to them.

Finally, I hope that many of you will be able to attend the International Section reception at the annual meeting. It is a highlight of the year and will give you a chance to meet many of the council members in person. And, hopefully, you will be encouraged to run for council yourselves one day. □

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Council Election Results

The results of the International Section council elections are in. We have three new council members who have been appointed to serve three-year terms.

Kuocheng (Joe) Chou is a manager at Ernst & Young LLP in Philadelphia, Pa.

He has worked in both consulting firms and insurance companies. His experience includes financial reporting, pricing, merger and acquisitions, asset liability management, modeling and international assignment. In his words "I would like to bring my perspective to continue the progress and success of the International Section."

Richard de Haan is a senior actuarial advisor at Ernst & Young LLP in New York, N.Y.

He has worked in the global consulting field specializing in mergers and acquisitions and capital markets. In his own words "I have a keen interest in International Insurance and actuarial developments, and in particular the global convergence of actuarial methodologies and standards."

Darryl Wagner is a principal at Deloitte Consulting LLP in Hartford, Conn.

His experience includes numerous international consulting assignments involving financial reporting, mergers and acquisitions, reinsurance transactions and policyholder protection structures. In his own words "…to leverage my international experience serving clients on six continents to help SOA members and other actuaries around the world find ways to work together and learn from each other …"

responsibilities of the IAA and the IAA has purposefully worked to build beneficial relationships with major international regulatory organizations and standard setters.

Standards and Cooperation

To be successful, both locally and globally, the actuarial profession needs to guarantee a high-level of competence of its members and responsible professional practices. Beginning in 2002, the IAA issued global standards with guidelines for social security actuaries, followed by several standards related to international accounting standards. At the moment, several others are under development.

In February, the IAA Risk Margin Working Group issued the Exposure Draft of Measurement of Liabilities for Insurance Contracts for public comment and, at the time of writing, the second ED is under preparation. This paper was originally requested by the IAIS, but the IASB has also shown interest in the work. They see that the measurement of liabilities for both general financial reporting purposes and regulatory purposes should be as consistent as possible and that actuaries have insight into this. This ad hoc working group was established jointly by the IAA Insurance Accounting Committee, the Insurance Regulation Committee and the Solvency Subcommittee.

I mention this as an example of the very good working relationship the IAA has with the IAIS and the IASB as well as with many other international bodies. The IAA committees have also commented on several IAIS drafts for standards and guidelines: ERM, capital standards, valuation of assets and liabilities, internal models. The Working Plan 2008–2012 of the IAIS includes several references to cooperation with the IAA. The IAA is an Observer of the IAIS and the IAIS is an Institutional Member of the IAA. An IAIS representative takes part in IAA meetings and the IAA representative participates in IAIS meetings on solvency and accounting. The IAA has undertaken a project for the IAIS to analyze the best practices for the determination of technical provisions and capital requirements and the assessment of the adequacy, relevance and reliability thereof. These issues are critical to the future work of the IAIS in developing supervisory standards and guidance papers for solvency assessment purposes, and to the IAIS's ongoing work in providing comments to the IASB in connection with its Phase II Insurance Contracts project.

Also, it is a top priority of the IAIS to maintain close communication with the IAA, particularly with respect to standard development activities in solvency, accounting and actuarial issues. The Solvency and Actuarial Issues Subcommittee of the IAIS has received, in principle, agreement to progress with its proposal of the structure of solvency papers and high level standards and guidance papers.

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According to the work plan, these will be followed by application guidance or practice notes developed with the IAA.

Role of the Actuary

One of the key objectives of the IAA is to promote the development of the role of the actuary. At the moment, there are several international initiatives which could potentially influence actuarial work.

The IAIS is preparing a Risk Management Standard, the first draft of which did not mention actuaries or actuarial work. Instead, the Corporate Governance Task Force of the IAIS has included in its draft report, recommendations concerning actuaries and external auditors, e.g., fit and proper criteria (qualifications, professional proficiency, appropriate practice experience and updated knowledge on developments within their profession and membership of professional bodies).

There are also many others like IFAC, IOPS, ISSA and OECD working in this area. It is important for the global actuarial profession to influence the requirements to be imposed on them as well as to promote the expansion and development of the profession. Having built fruitful relationships with these organizations, and with the support of its member associations, the IAA is pursuing the best opportunities to work for the benefit of its members.

ERM

Many actuarial associations are considering their role in the broader area of risk management, particularly in the relatively new field of enterprise risk management (ERM). The key question relates to the positioning of actuarial qualification vis-à-vis competing professions. One of the pioneers in this area is the Society of Actuaries which has already introduced a new category of qualification called Chartered Enterprise Risk Analyst (CERA).

The competition in the risk management area for the actuarial profession comes primarily from two relatively new associations, namely, GARP and PRMIA. In addition, the CFA qualification is also seen as a competitor, although the scope of the CFA is much broader than risk management. While officially located in the United States, these three associations have taken an international approach and are attracting a global membership.

In order to survive in the long run, the actuarial profession needs to adjust to the changes in the world surrounding it and to take advantage of new opportunities. During the Presidents' Forum meeting in April of 2007 in Mexico City, the presidents of the IAA Full Member associations gathered to discuss, among other things, how the profession should respond to the development of ERM. Based on the work by, for example, the U.S. and Australian actuaries, the proposal of a global ERM designation within the actuarial profession was introduced. Each supporting organization should be free to decide how to fit its ERM requirements into its own qualification process and have the sole authority to grant this designation. In order to ensure comparability between the requirements of the supporting associations, those associations could support the designation through a treaty of mutual recognition. Whether this initiative will become reality in this or in another form, it is worth discussing together and combining our efforts.

Challenges create opportunities and for actuaries risk is opportunity. ☐

"In order to survive in the long run, the actuarial profession needs to adjust to the changes in the world surrounding it and to take advantage of new opportunities."

Ambassador Corner

The Ambassador Program is a key initiative established by the SOA International Section. Ambassadors assist in carrying out the Society of Actuaries' international programs.

Ambassadors:

- Identify and develop subjects of international interest for communication to SOA members.
- Identify special needs of SOA members in different areas of the world.
- Help the actuarial profession to grow in areas where the profession is not well developed.
- Function as a valuable resource and link between the SOA and national actuarial organizations and actuarial clubs.

Recent activities of SOA ambassadors:

- Ronald Poon-Affat in Brazil: Published an article in *The Actuary* on the opening up of the reinsurance market in Brazil (2007).
- Luis Caro in Colombia: Board Member on the Asociación Colombiana de Actuarios and frequent speaker at local institutions.
- Cathy Lyn in Jamaica: Member of the Ministry of Finance's Technical Committee which was set up to formulate Pension Reform Legislation. Invited to give keynote address during the University of the West Indies Actuarial Society's (UWIAS) first annual Awards Ceremony and Dinner in February 2007.

Guest Speaker Cathy Lyn, FSA, FIA, shares a light moment with UWIAS President Rohan Hall and Vice President Kerron Blandin.

- Suchin Pongpuengpitpack in Thailand: Set up an area (Actuarial Exam Room) on the Society of Actuaries of Thailand Web site *(www.thaiactuary.org)* to provide SOA exam news updates and exam information for Thai examinees (2007).
- Nhon Ly in Vietnam: Participated during the second actuarial meeting in Vietnam to create opportunities for professionals to network and re-start building an actuarial community in Vietnam. Also working with other groups to form an official actuarial association in Vietnam.
- Ikram Shakir in Luxemburg: Attended the AGM of the Actuarial Association of Luxemburg (ALAC). He was elected Finance Director of the Board of ALAC.
- Eric Seah in Singapore: Liaises with the secretariat of Singapore Actuarial Society (SAS), making sure conferences and seminar activities in Singapore and the region are communicated through the SAS channel.

Welcome new ambassadors:

- Carrie Cheung is an actuary at ING Life Insurance Company in Tokyo, Japan.
- Carlos Arrocha is an actuary at Swiss Re in Zurich, Switzerland.

To learn more about the program, read the country webpages and find out how to contact your ambassador, please go to the Ambassador Program section on the SOA Web site at *http://www.soa.org/professional-interests/international/intl-ambassador-program.aspx.*

Being an SOA ambassador can be a rewarding and fulfilling activity, if you are interested in finding out more please contact Martha Sikaras at *msikaras@soa.org.* ☐

Continuous Professional Development

by Paul H. Grace

Many refer to Continuous Professional Development (CPD) as lifelong learning but I believe that CPD goes beyond lifelong learning; the critical difference is the word "professional."

Virtually everyone embarks on lifelong learning from the moment they are born until old age. Whilst this will be apparent for those undergoing full-time education, most continue to learn new things, new ideas and new concepts beyond retirement. Technological developments mean that people learn to use new gadgets and equipment. People learn to live with new legislation. People learn about what is happening in the world around them via the media, whether newspapers, magazines, radio or TV. By travelling, people learn about other cultures. A lot of lifelong learning is voluntary.

The public have confidence in the case of people following a profession—medical, legal, actuarial, accountancy, etc. They expect the professional to understand their needs and the relevant legislation and use techniques and expertise to give them sound advice. In other words, the public expect the professional to be competent and to have the relevant experience. Experience comes with practice over a period; competence has to be maintained. Thus people expect a doctor to be able to diagnose a medical condition, or if necessary refer them to a specialist with the relevant knowledge, and having diagnosed the condition use the latest treatments to control, if not cure, the condition. Likewise someone consulting an actuary expects the best available advice taking into consideration their requirements, economic climate and legislative environment. Lifelong learning for a member of a profession is not a voluntary activity—it is obligatory and it extends to all aspects of the professional's work:—technical skills, personal skills and business skills.

Actuaries need to carry out CPD to help ensure that they are competent to provide actuarial advice. It is not just technical skills and competencies that have to be developed and kept up to date, but also personal, professional and business skills and competencies.

Actuarial CPD Schemes Around the World

In 2006 the International Actuarial Association (IAA) conducted a survey of Member Associations' CPD Schemes—the results were published at the 28th Congress held in June 2006 in Paris. Most associations responded. But less than 50 percent of the respondents had a formal CPD Scheme; however, schemes covered about 80 percent of the world's qualified actuaries.

The Society of Actuaries (SOA) was amongst those associations without a CPD Scheme of its own, but most of its members, including all those working in the United States are members of the American Academy of Actuaries (AAA), via its Qualification Standard, who have a CPD Scheme. Furthermore, many members of the SOA working outside the United States are members of the association in the country where they are working and will be subject to the CPD requirements of that association. The SOA's Board of Directors charged the SOA's Knowledge Management Strategic Action Team (KMSAT) with the task of establishing a CPD Scheme applicable to all its members. An exposure draft process on the proposals has been recommended with a view to their implementation on Jan. 1, 2009. This article does not consider these proposals.

The scope of the schemes in existence varied enormously. About 80 percent of the CPD Schemes prescribe a minimum amount of CPD each year, usually measured in hours, although some associations allocate varying weights to different types of CPD. The minimum number of hours prescribed ranged from 15 to 50 hours p.a., the most common being 15 hours. Some prescribed that certain issues should be covered, e.g., relevant legislative changes. The breadth of possible CPD activities is generally quite wide—and some associations recognise the value of self-study. Many associations

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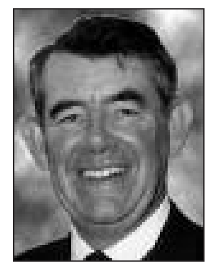

Paul H. Grace has been a member of the IAA Education Committee for some years and led the working group that developed the IAA proposed strategy on CPD. He was president of the Faculty of Actuaries from 1996-1998. He can be reached at paul.grace@virgin.net.

require those actuaries working in non-traditional areas to do CPD. Only a small number organize examinable CPD. Many associations monitor that their members are meeting their CPD requirements, failure to comply can lead to loss of practicing rights or even loss of membership.

The table below summarizes the CPD Schemes for members of the associations in Australia, Canada, Hong Kong, Mexico, South Africa and the United Kingdom, as well as the American Academy.

Country/ association	Minimum number of hours perannum (p.a.). These may in some cases be averaged.	Summary of CPD Scheme	Anything specific specified	Exemptions	Limitations on provider	Treatment of Self-study	Any other requirements
United States – Academy	30	CPD needs to be done if individual wishes to practice and will issue "statement of opinion." "Organized Activities" (OA) involve actuaries or other professionals working for other organizations. CPD is self certified. Failure to comply leads to disciplinary action.	At least three hours must be on professionalism issues and at least six hours on organized activities. If the actuary issues Statutory Statements of opinion, he/she must do 15 hours, of which six hours must be OA, gaining knowledge related to such opinions.			Self-study is permissible.	Some examinable CPD is offered.
Australia	40 – this can be averaged over two successive years subject to at least 20 hours in any one year.	All members required to do CPD. Annual declarations are required and there are random checks. Failure to comply results in loss of practicing rights and possible disciplinary action.	CPD can either be in general actuarial techniques or one's specialist area.	Those not providing a professional service and either retired or on extended leave.	In the case of commercial activities, they only count if they result in improvement and broadening of knowledge.	Self-study is permissible.	Those providing pro-bono actuarial services must do CPD.
Canada	100 hours over a two year period. (other references to amount of hours required also relate to a two year period.)	All members required to do CPD. At least 24 hours every two years must be structured, i.e., activity where more than one point of view is provided. Annual declarations are required. Failure to comply initially regarded as a membership issue but continued non-compliance could invoke discipline process.	12 hours of structured CPD must cover technical skills, 4 hours of structured or unstructured on professional issues and 4 hours of either structured or unstructured on business/ management skills.	Those not practicing, retired or not employed. Associates still sitting exams. But two year requirements apply to those returning to work.		Self-study counts as unstructured – but discussing outcome could count as structured.	
Hong Kong		CPD is not mandatory but all members are members of another association which may or may not have a mandatory scheme. Members are deemed to have met HK requirements if they have met those of own association.	Reasonable proportion of CPD activities should be on HK issues. Sometimes business or management skills might be included in requirements.				
Mexico	40	Mandatory for holders of certificates. 32 hours at seminars or courses with formal examination; the rest not evaluated. Failure to follow CPD program leads to loss of certification.	Courses approved as part of CPD scheme. Six hours must be spent on legal issues and at least eight hours on specialist technical issues.	Scheme only applies to certificated members.	Courses for evaluated CPD must be approved under scheme.		Special rules apply if you have certification in more than one specialist area.
South Africa	15 formal and 52 informal	Formal CPD involves attendance at meetings organized by association, etc. Not more than 7.5 hours for any day and not more than 15 hours per event. Compliance is self-certified. Failure to comply can lead to loss of Practicing Certificate.	None unless new technical issue arises. Professional issues are discussed at some sessional meetings and at annual convention.		Not more than 7.5 hours p.a. may be provided by events attended solely by colleagues.	Can be included in informal activity.	
United Kingdom – Faculty and Institute	15 except for those not working in specialist actuarial areas who determine their own amount of CPD.	Activity that is observable by others classified as verifiable, includes self study leading through to a presentation otherwise non-verifiable. Required to complete CPD record on Web site. To count as verifiable must retain evidence of attendance.	At least 10 hours relevant to practice area; at least two hours on professionalism skills; at least four events including two events covering technical skills. Practice Boards can specify issues to be covered.	Retired members, unless doing voluntary work, are completely exempt.	Those with (statutory) practising certificates must have obtained at least five hours of relevant CPD by attending events not predominantly attended by colleagues.	Non- verifiable not allowed for those with (statutory) practising certificates	Attendance at professionalism course at least once every 10 years.

IAA Proposed Strategy

The IAA Education Committee includes CPD within its remit and has been developing a strategy to address the issue. This article reflects the proposed strategy that will be discussed at the IAA meetings in Dublin in October—the proposals have been well received so far, whether they are adopted as guidance to member associations remains to be seen. Not surprisingly the proposed strategy has regard to the current practices of many of the IAA's member associations.

It is the individual actuary who is aware of the work he/she does and thus the scope of required knowledge and competencies—it is the individual actuary who is best placed to plan his/her CPD program although his/her association and possibly even the IAA might provide guidance as topics to be taken into consideration in developing a CPD program. For many actuaries their CPD program is likely to be integrated with any development program they have agreed to with their employer.

The reputation and status of the actuarial profession depends on actuaries giving relevant and up-to-date advice. It follows that all actuaries should undertake CPD.

On qualification, actuaries are at the start of their careers and still have much to learn and experience to gain, so CPD will be essential to continue the process of development. Actuaries need to keep up with the development of new products and with the new types of risk that might evolve over time. It is important that actuaries keep abreast of developments in actuarial techniques so that the work done is up-to-date and relevant. Actuaries need to be aware of current methodologies and factors which may affect the suitability of models and assumptions; in the case of new techniques it may be necessary to distinguish between the desirability of acquiring the ability to perform new techniques and the necessity to understand that the technique exists and what its uses are. Stochastic modelling is such an example.

Actuaries need to be aware of developments in national and international legislation and accounting standards as well as keeping up with new actuarial standards of practice and modifications to existing standards. When moving between countries or working in an international environment, actuaries need to understand the different products and risks in different countries, the regulatory and legislative framework in each country and the applicable accounting standards and actuarial standards and practices.

Actuaries may take on a number of different roles, over their careers, including managerial roles, and personal development will be necessary to equip them for these new roles. The expansion in the profession means that actuaries are moving into new areas of practice with the consequent need for development.

Actuaries need to be regularly challenged to think through professionalism questions; for example, dealing with conflicts or public interest issues.

An actuary who is still working but no longer providing actuarial advice, for example, a senior executive or someone possibly retired from full-time employment but engaged as a non-executive director, may be known by colleagues to be an actuary and thus a professional should ensure that he/she remains competent for the work he/she is doing, i.e., follow a CPD program appropriate to the work being done.

In planning his/her personal CPD program, an actuary should set objectives, the CPD activities should relate to these objectives and include practical application of the knowledge gained. The individual should consider how to monitor progress on the objectives, possibly in conjunction with his/her employer.

CPD can be achieved in a number of different ways:

- Attendance at local, national or international actuarial meetings, seminars, colloquia and workshops.
- Attendance at courses, given by actuarial associations, universities and other bodies.
- Participation in discussion groups on actuarial topics, possibly amongst

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"Actuaries need to keep up with the development of new products and with the new types of risk that might evolve over time."

colleagues or peers and possibly via the Internet.
- Participation as an examiner in actuarial examinations.
- Study for a further qualification including membership of other relevant professional bodies.
- Writing papers and books.
- Giving talks or making presentations to colleagues or at conferences or seminars.
- Private reading of relevant journals and books.

Self-study is perhaps the most valuable form of CPD—it can be carried out at a time most convenient to the individual, it can be targeted at the individual's requirements and a point not initially understood can be revisited. However, whilst the outcome should be easily reflected in subsequent work done by the individual, it is the most difficult form of CPD for monitoring. One way of demonstrating the results of self-study is a presentation on the outcome to colleagues.

Some associations encourage participation in CPD events attended by actuaries from various organizations (external CPD) instead of those provided solely for actuaries of a particular firm (internal CPD); the concern being that internal CPD events may reflect too closely the employers views on issues.

The amount of CPD that an actuary does is a personal decision. However, many associations that operate a formal CPD Scheme specify the minimum amount of CPD a member should do and some stipulate its form and topics or issues that should be covered. Minimum requirements that are specified range from 15 hours to 50 hours per annum, averaging in the region of 25 hours per annum. Specifying minimum requirements means that all an association's members are conscious of the need to follow a CPD program.

In the case of actuaries working in a territory other than where their association is established, their association may have regard to the CPD requirements of the IAA association that is based in the territory in which the actuary is working, and may require such an actuary to comply with such requirements.

Even where an actuary's association is not operating a CPD Scheme, it is good practice for each actuary undertaking CPD to maintain a personal record. Some associations offer a facility on the Internet for their members to record their CPD activities. This record should consider the development undertaken and a reflection by the actuary on the learning that has taken place with indications of future learning and development activities.

Monitoring of CPD records is carried out by some associations. In this connection some associations distinguish between CPD that can be verified, for example, attendance at a conference for which there is a list of delegates available, and that which cannot be verified, which could include some self-studying. Some other associations distinguish between formal and informal CPD activities, formal typically being conferences, seminars, etc. and informal primarily self-study. Failure to undertake CPD in accordance with many association's schemes can lead to disciplinary action by the individual's association.

The survey of CPD carried out in 2006 by the IAA highlighted lack of adequate resources, in particular by smaller associations, to deliver adequate CPD for their members. This is clearly an area in which the IAA should play a role and it is currently considering what it can do. In the meantime it will encourage each association to formulate its own CPD strategy and will provide guidance to any association wishing to develop a CPD strategy. The need of CPD will be taken into account by the IAA (and its sections, i.e., ASTIN, Life, etc.) when organizing events. The IAA is planning to create a CPD database, incorporating a diary of forthcoming events and links to CPD material; this of course will be dependant on cooperation by associations in drawing relevant events to the attention of their members. □

Pension Accounting Changes

by Catherine Robertson

Standards for accounting for pension and post-retirement plans around the world are changing. The ultimate goal is a global standard which will replace International Accounting Standard 19 (IAS 19), which is used in many European countries, as well as in other countries around the world. The first steps in convergence are underway. This first in a series of articles will concentrate on the changes in the United States under their Statements of Financial Accounting Standards (SFAS).

Adapting to a New Reality

At the end of 2006, employers following U.S. accounting standards were faced with a new set of reporting rules for defined benefit pension plans and other post-retirement benefits. The most significant change was a new requirement to recognize immediately the entire funded position of the defined benefit plans directly on the employer's balance sheet, whether the plans are in a surplus or a deficit position.

The U.S. Financial Accounting Standards Board (FASB) issued its Statement of Financial Accounting Standards No. 158 Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans in September 2006. The standard is applicable to financial statements of public companies and not-for-profit organizations sponsoring single-employer pension and other post-retirement benefits plans. It amends parts of FASB Statements Nos. 87, 88, 106 and 132 (R). The changes do not apply to employer financial statements related to multi-employer pension or benefit plans.

What is Different about SFAS 158?

This accounting standard introduces the following new requirements:

- Recognition of a plan's funded status in the balance sheet;
- Immediate recognition of changes in funded status in the balance sheet;
- Footnote disclosure modifications; and
- Measurement of assets and obligations at the end of the employer's fiscal year.

Although the funded position of pension and benefit plans has been part of the disclosure notes in financial statements for a number of years, the recognition of these surpluses and deficits on the employer's balance sheet has generally emerged on a delayed basis under US GAAP, due to the amortization methods applied to past service costs and to experience gains and losses. For certain pension plans in a deficit position relative to the "accumulated benefit obligation," there has been only limited recognition of the deficit on the employer's balance sheet through the "minimum liability" reporting process.

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Recognition of Funded Status

The new standard now requires employers to recognize the full funded status of benefit plans in the statement of financial position. The funded status of a benefit plan is the difference between the fair value of plan assets and the benefit obligation. For a pension plan, the benefit obligation is the "projected benefit obligation" (i.e., incorporating future salary increases on accrued benefits), and for an Other Post-Employment Benefits (OPEB) is the accumulated post-retirement benefit obligation.

The prior standards allow an employer to recognize in its statement of financial position an asset or a liability arising from benefit plans which in most cases differs from the funded position of the plan as it allows for delayed recognition of actuarial gains or losses and costs of benefit changes. In some cases, an employer could recognize an asset for a plan which was underfunded. In the prior standards, information on the funded status of a plan is provided only in the notes to the financial statements.

Under the new standards, the difference between a plan's funded status and the current balance sheet amount, i.e., any existing unamortized actuarial gains and losses, prior service costs and/or transitional balances will be recognized as a credit or charge through accumulated other comprehensive income (AOCI) without passing through the company's income statement. Essentially, this results in a direct increase or decrease to shareholder equity. For companies with underfunded plans, the reduction could be significant, especially in the first year of reporting under the new rules. A recent evaluation of the financial status of companies sponsoring pension and OPEBs within the S&P500 group indicates that about 25 percent of them will have a material charge to shareholder equity resulting from the implementation of FASB No.158.

For not-for-profit organizations or other entities that do not report other comprehensive income (OCI), the adjustment from recognizing the plan's funding status is reflected in unrestricted net assets.

The status of all overfunded plans shall be aggregated and recognized as an asset on the balance sheet. Similarly, underfunded plans shall be aggregated and recognized as a liability.

This first stage of the project to amend pension accounting standards does not modify the calculation of the net periodic benefit cost (NPBC). Any existing actuarial gains/losses, prior service costs and remaining transitional balances continue to be amortized as under the prior standards, with an appropriate adjustment to OCI as they are amortized.

Recognition of Changes in the Plan Funding Status

Any new actuarial gains and losses and/or prior service costs that arise during a future fiscal period are immediately recognized in the balance sheet. These new amounts can continue to be amortized under the current standards. To the extent that these amounts are not recognized as a component of NPBC in the period that they arise, they are recognized as a component of OCI, with an appropriate adjustment as they are amortized through the NPBC in future periods. For not-for-profit organizations, the reclassified amounts must be shown separately on the statement of activities for the reporting period.

This change results in immediate recognition on the balance sheet of the cost of any future benefit improvements, although the recognition on the income statement continues to be delayed. This could have a significant impact on future changes to plan design.

Disclosures Related to the Recognition

The notes to financial statements have to be changed. Along with the recognition of the plan funded status and its changes during the reporting period in the statement of financial position, the new standard introduces new disclosure requirements and removes the redundant ones. In particular, a footnote reconciliation of AOCI status is now required while a footnote reconciliation of funded status is removed.

The disclosure requirements in respect of reconciliation of the fair value of assets, accrued benefit obligations, cash payments, and assets portfolio remain unchanged.

Effective Dates for Recognition and Related Disclosure

The effective date for recognition of the plan funded status on the balance sheet and for the related disclosures is the end of fiscal year after Dec. 15, 2006 for public companies and six months later, i.e. ,the end of the fiscal year after June 15, 2007, for non-public companies. Application as of the end of an earlier fiscal period is encouraged in both cases, but must be applied to all of an employer's benefit plans. Retrospective application is not permitted, so financial statements for previous reporting periods will not change. The methodology prescribed under FASB Nos. 87, 88, and 106 for measurement of plan assets and benefit obligations, as well as determination of the net periodic benefit cost, continues to apply.

Change of Measurement Date

Plan assets and obligations are to be measured as of the fiscal year end. The new rules no longer permit measurement of assets and obligations up to three months before the fiscal year end.

The effective date of this change is delayed to the fiscal year ending after Dec. 15, 2008, in order to give companies enough time to change their valuation and budgeting processes. Earlier application is encouraged but not required.

The transition from an advanced measurement date to a fiscal year-end date must be accounted for by an adjustment to the retained earnings. The new standard allows for two calculation methods of the adjustment.

The first method is to re-measure the assets and obligations at the beginning of the fiscal year of the new measurement date and to adjust the opening balance of retained earnings by the amount of the NPBC corresponding to the period between two measurement dates.

The second method is to use the earlier measurement and to adjust the retained earnings for the year of transition by the amount of NPBC proportional to the period between the two measurement dates.

Under both methods, any gain and loss arising from a settlement or curtailment during the transition period is recognized in earnings in the period and not as an adjustment to retained earnings. Any gains and losses other than from settlements or curtailments are recognized as a separate adjustment to the opening balance of accumulated OCI.

Future Changes

These changes are the first phase of a two-phase comprehensive review by FASB of all the accounting rules applicable to pensions and OPEBs. The aim of the project is to have a set of rules that are consistent with the international accounting standards.

The first phase of the project focuses on balance sheet recognition. FASB feels these changes will improve financial reporting by providing more complete financial information with the reporting of the plan funded-status, that the statements will be more understandable, by eliminating the need to reconcile with the information currently provided in the notes to the financial statements and that the statements will be more timely by requiring immediate recognition of all transactions in the year.

The second phase of the project is expected to take several years and result in an extensive overhaul of the pension and OPEB accounting rules to improve consistency with international accounting rules as well as address numerous concerns with the current standards. Issues expected to be addressed include measurement of assets, smoothing, recognition of gains and losses, past service costs as well as multi-employer plans. The two-phase approach is also being followed by the International Accounting Standards Board to revise and improve International Accounting Standard IAS 19 (Employee Benefits). No timing has yet been confirmed for the expected completion of phase 2 of the project. ☐

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Chinese Insurance Market: Opportunities and Alternatives

by Nian-Chih Yang

Over 40 foreign insurers have entered the Chinese market operating 70+ insurance companies. There are actually more foreign insurance companies than domestic companies in China. However, domestic companies still dominate the Chinese insurance market. The largest domestic insurance company has half of the life business. Foreign insurers possess 6 percent of the Chinese insurance market and 18 percent of the insurance market in the cities Shanghai and Guangzhou.

Entering the Chinese insurance market:

Most foreign insurance companies enter a partnership with a domestic company to access the market. A few foreign insurance companies brought all their managers from the home office to run their Chinese operation to ensure maintenance of the corporate standards and culture. A different way to enter the market is to provide group coverage to the employees of a formerly state-run enterprise. There are many such enterprises with large assets and hundreds of thousands of employees. A foreign insurance company can quickly make a presence in the market. To enter, the foreign insurance companies are required to have been in the insurance business for the last 30 years and have at least US$5 billion in net assets. They can own up to 50 percent of the equity of a domestic company.

What do Foreign Insurance Companies Offer?

Amid the rapid economic growth and demographic changes, the Chinese government hopes that foreign insurance companies can bring in needed capital and expertise as the country goes from a planned economy to a market economy. Foreign insurance companies can provide standard professional practices and expertise on corporate management, risk protection and mitigation, and information quality and effectiveness. They can also help in the development of underwriting/claim control, legal system, selling channels, and agent development programs. Finally, some surveys show that consumers trust well known and established foreign insurance companies more than their domestic counterparts.

Characteristics of the Chinese Market

The insurance market is influenced by a unique combination of characteristics: An aging population with a high rate of saving, strong centralized government regulations, regional differences in economic development, rapid economic growth, huge growth potential, a low insurance penetration rate, under reporting of personal and business incomes, market dominance by large domestic insurers, and most importantly a population of over one billion.

A Cutting Edge Regulatory Environment

The Chinese insurance regulators are taking a proactive approach. The government believes the market-based insurance system can play an important role in alleviating many of the problems the country is facing. The China Insurance Regulatory Committee (CIRC) has established a robust supervisory and regulatory system during its short existence. CIRC has put in the effort to keep its system in tune with the latest developments in insurance regulations in other countries. Some might say the system is more sophisticated than most of the products on the market it tries to monitor. It does encourage orderly competition and provide an inviting environment for insurance products.

Main Products on the Market

The common types of coverage available in China are life, annuity, health, motor, commercial property and group health that wraps around the state system. Currently, agents are the main sales force in the individual market.

Public awareness of insurance products is low

Many Chinese consumers consider the insurance premiums as an extra expense, instead of a necessary expenditure. As in any developing market, the public needs to be convinced of the value of insurance coverage. The insurance industry should take the main responsibility for this task and educate the public about its products and processes.

Lack of health service providers

There are no HMOs or PPOs in China. There are some basic health maintenance plans provided by hospitals. Generally, there are no physician private practices. Since there are few regulations on prescription drugs, patients often purchase medicine over the counter and treat themselves without a physician's involvement.

Uneven health protection

The government practices Chinese-style Socialism. In the urban/coastal areas, the success in the last 20 years has resulted in some improvement of public health services. Yet in the rural/inland region, there are still remnants of the commune structure and public health service is minimal. Some commune members (excess manpower) go to the cities to work. They are not registered residents and therefore have no access to public health coverage in the cities they work in. The unprotected population often chooses not to seek medical treatments in medical emergencies. The publicly funded portion of health care has actually shrunk in the last 10 years, while the economy has vastly improved. This is the source of many complaints; economic growth is carried on the back of the rural population.

Mortality gain:

Life insurers in China can count on a more pronounced mortality improvement as a result of improved health care and nutrition due to economic development and a possible reduction in the smoker population.

Opportunities

Restrictions removed for foreign insurers to conduct business

Private insurance companies came into existence only 20 years ago. After the Chinese government entered the WTO in 2002, foreign insurance companies can now sell without any geographic restriction and with just a few product restrictions. Nevertheless, foreign insurance companies are still restricted from selling directly written reinsurance contracts, motor insurance and pension products.

Growth and fierce competition

The Chinese national GDP growth rate is high but the growth rate of insurance premiums (25 percent annually, 2001-2005) is almost twice that. A brisk economic environment, expanding affluence, and higher risk awareness all point to a rapidly increasing demand for insurance products. Yet the competition for premium dollars in the major urban cities, the main marketplace for insurance, is fierce.

A need for experienced managers

There are shortages of experienced actuaries and professional insurance managers, which have contributed to under-performing domestic insurance companies. The local staff are motivated and quick learners, but they need guidance from experienced managers.

A need for capital to grow

There is an urgent need for capital to grow. The two top domestic insurance companies have successfully listed on foreign stock markets and have access to international capital.

Pension/Retirement Plans

The aging Chinese population, exacerbated by the one-child policy, will face many retirement related problems. A young couple would

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have two sets of parents to support. There is an urgent need to provide retirement income products. As the government moves away from a planned economy mode, it also removes state support for pension.

Travel coverage

There are 100 million transient workers in China, with heavy traveling during the major holidays. Insurers can experiment with designs of affordable simple coverage for the hazards involved in traveling.

Agriculture insurance

Currently, 80 percent of the Chinese population's employment is in agriculture. The government is especially interested in developing agricultural insurance products.

Internet based products

China's young professionals are Internet savvy and aware of western advertisements on Web sites. They have easy access to Web-based selling channels and are adaptable to Web-based policy administration and communication. Completely Internet-based insurance products may be viable for this segment of the market.

Mortgage insurance

Chinese parents are expected to provide financial support for their son to achieve home ownership. Due to the high price of housing, despite a high saving rate, the parents and the son often have to jointly sign for a mortgage with a small down payment. This seems to be an ideal market for mortgage insurance. Yet, the sales results have been poor. The consumers consider the mortgage insurance premium an unnecessary expense.

Reality Check

A need for a long-term plan

Early foreign entrants to the Chinese insurance market have invested heavily in personnel and contacts for the last 20 years. It is too late to get in the game for those foreign insurance companies that are entering China simply because most of their competitors are doing it and are planning to copy the competitors' business models. Several foreign insurance companies have been in and out of the Chinese market several times and invariably did poorly. To be successful, the foreign insurance companies must have a long-term horizon and stay with a steady game plan.

Competition in urban markets

In urban areas, where foreign insurance companies have most of their business, young professional couples are delaying having children, just like their western counterparts. Their insurance needs are delayed. The growth potential in this segment is limited if foreign insurance companies do not explore new products or services. If a foreign insurance company decides to stay in this segment, it should pursue profit instead of premium volume.

Stay ahead of competition

The local companies have home court advantage. They have a majority of the market. In the group market particularly, contact with the employers is important. It takes a long time to develop these relationships. The foreign insurance companies need to be innovative and stay ahead of the competition. Successful products are copied quickly. Resting on one's laurels will lead to reduced production in no time.

Evolving legal system

The legal system is not well established in China. There have been few lawsuits involving insurance matters, but fraud is prevalent in the usage of health coverage. The insurance companies and health care practitioners must avoid falling into the abyss of defensive medicine. There have been a few reported cases of foreign insurance companies caught breaching the law, in areas such as under reporting of income or contracting with agents illegally.

Unprofitable health products

Sales for health insurance coverage are rising as fast as for life coverage. But most insurers are not operating profitably on these policies. Insurers have no mechanism for data collection and viable utilization/claim controls. The Chinese Medical Association is in the process of building a database of disease classification codes.

Alternatives

Market based products are not the cure-all

Prior to the opening of the market economy, the government did provide basic protection for all. The barefoot doctors carried medical care to the remote corners of the country. How far should the pendulum swing to the "everything for profit" mode? Is the privately funded insurance model a good fit for a populous country like China? There are vigorous debates on Chinese Web sites on the merits of the different approaches. Market based insurance products cannot solve all the insurance needs for the populace.

Provide the right products

Both the foreign and domestic insurance companies need to develop a new paradigm to succeed. The successful companies are the ones that react to the new market, accommodate demanding customers, take advantage of new IT technology, and take command of risk management skills. The products need to meet the specific needs of the consumers with realistic assumptions based as much as possible on the domestic experience.

Think radically

To reduce the cost of insurance products, foreign insurance companies can try various cost saving approaches such as more intrusive underwriting, levelized commissions, and "product purchased instead of sold (salary based product)." These approaches have all been tried in the foreign insurers' home market and were unsuccessful due to legal/ cultural limitations or conflict with entrenched interests. But these approaches may work in the Chinese market.

Conclusion

The Chinese market is a great opportunity for foreign insurance companies to become active in a rapidly growing and modernizing economy with a huge population base. Through careful planning and wise collaboration with domestic insurance companies, there is great potential for economic gain. Nevertheless, due to China's unique economic and demographic qualities, alternative approaches to insurance products may be required to achieve success.

Acknowledgements I would like to express my appreciation to my fellow members of the Chicago chapter of the Chinese Actuarial Club. Some of the issues and data included in this article came from comments and suggestions made at our semi-annual seminars. ☐

SOA International Experience Survey—Embedded Value Financial Assumptions

by Charles Carroll,[1] William Horbatt, and Dominique Lebel [2]

The Society of Actuaries' International Experience Study Working Group has been conducting surveys of published embedded value (EV) financial assumptions beginning with 2003 EV publications.[3] This article updates the survey with 2006 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	Mitsui
Munich Re	Old Mutual
Prudential UK	Resolution
Standard Life	Swiss Life
Swiss Re	T&D
Tokio Marine	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 28 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 2006 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.

Limitations

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

- When comparing one assumption 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.

[1] Charles gratefully acknowledges the assistance of Yoshiaki Ito, FIAJ of Ernst & Young's Tokyo office.

[2] Dominique gratefully acknowledges the assistance of Russell Gao of Towers Perrin's Hartford office.

[3] *International News,* Issue 34, October 2004, Society of Actuaries, p. 19. Issue can be found at: *http://www.soa.org/library/international-section-news/isn0410.pdf , International News,* Issue 36, July 2005, Society of Actuaries, p. 28. Issue can be found at: *http://www.soa.org/library/newsletters/international-news/2005/july/isn0507.pdf* and International News, Issue 40, November 2006, Society of Actuaries, p.8. Issue can be found at: *http://soa.org/files/pdf/ISN0611.pdf*

Financial Assumptions from Survey

Financial assumptions presented in this article include

(1) Discount rate—the risk discount rate (RDR) 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.

These results are presented in two separate tables. Table 1 provides the number of companies contributing data as well 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	13
CAPM	5
WACC	4
Not Disclosed	6

- 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 appropriate for valuing similar cash flows in the market.
- 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 Table 1, which are labeled "Implied Discount Rate" are the RDR inferred from the MCEV calculation. That is, they are discount rates that would develop the same embedded value using TEV techniques.
- Companies that explicitly set discount rates are referred to as calculating traditional embedded values (TEV). Two common methods used by them are the capital asset pricing model (CAPM) and 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.

In last year's study, out of 30 companies studied, 15 reported using some form of market consistent methodology. In this year's study, the authors adopted a stricter definition of what it means to be on an MCEV basis. The definition is outlined in the second bullet above. As a result of the stricter definition, four companies that were classified as MCEV companies last year were classified under one of the other categories this year. In addition, two companies classified as MCEV last year did not publish results this year because they were acquired. Four companies that were classified under other methods last year were classified as MCEV this year because they reported a change to a methodol-

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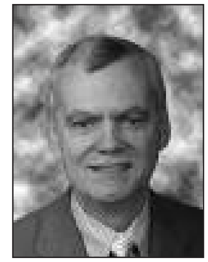

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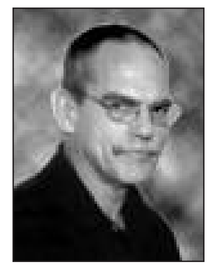

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ogy that met the strict definition of MCEV utilized in this year's study. Thus, although the net change in companies on an MCEV basis is a reduction of two, this does not indicate a reduction in the interest in MCEV. In fact, we expect the progression from TEVs to MCEVs to continue to increase.

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 2006 Explicit and Implicit Discount Rates

Country	Companies	Traditional Discount Rate (1)	Companies	Implied Discount Rate (In Force) (2)	Implied Discount Rate (New Business) (3)
Africa					
South Africa	0	NA	1	10.8%	10.8%
America Latin					
Brazil	1	19.1%	0	NA	NA
Chile	1	10.7%	0	NA	NA
Mexico	2	12.8%	0	NA	NA
Peru	1	13.7%	0	NA	NA
America North					
Canada	4	7.4%	1	6.6%	6.6%
US	7	7.8%	3	11.4%	12.1%
Asia / Pacific					
Australia	2	9.0%	1	7.9%	7.2%
China	3	10.5%	0	NA	NA
Hong Kong	3	8.3%	1	7.6%	7.2%
India	2	14.5%	0	NA	NA
Indonesia	1	17.5%	0	NA	NA
Japan	6	6.4%	1	9.8%	4.4%
Malaysia	2	9.1%	0	NA	NA
New Zealand	2	9.5%	0	NA	NA
Philippines	1	16.5%	0	NA	NA
Singapore	1	6.9%	0	NA	NA
South Korea	2	8.9%	1	NA	8.6%
Taiwan	3	7.1%	0	NA	NA
Thailand	2	12.1%	0	NA	NA
Vietnam	1	16.5%	0	NA	NA
Europe Central					
Bulgaria	1	7.9%	0	NA	NA
Czech	2	8.2%	0	NA	NA
Greece *	2	7.1%	0	NA	NA
Hungary	2	9.8%	0	NA	NA
Poland	3	8.8%	0	NA	NA
Romania	1	10.7%	0	NA	NA
Russia	1	11.3%	0	NA	NA
Slovakia	2	8.8%	0	NA	NA
Europe Western					
Austria *	1	6.8%	1	6.3%	6.2%
Belgium *	3	7.3%	2	7.5%	6.4%
Finland *	1	6.8%	0	NA	NA
France *	6	7.0%	3	6.3%	6.4%
Germany *	2	7.4%	4	6.1%	5.5%
Ireland *	3	7.0%	1	5.7%	5.7%
Italy *	3	6.6%	3	6.4%	5.7%
Luxembourg *	3	7.3%	1	7.0%	7.0%
Netherlands *	6	7.1%	2	7.5%	6.4%
Portugal *	1	6.8%	1	6.6%	5.8%
Spain *	4	7.0%	2	6.5%	6.0%
Sweden	0	NA	1	6.9%	6.9%
Switzerland	1	7.0%	1	5.4%	NA
UK	7	7.7%	5	6.9%	6.8%

* euro currency zone

Several observations can be made concerning Table 1 when compared to similar data published last year:[4]

- MCEV implied discount rates are most prevalent in South Africa, the United States and Western Europe while only TEV discount rates are found in Central Europe and Latin America.
- MCEV implied discount rates are frequently lower than TEV discount rates, particularly with respect to new business. A number of companies in their EV reports attribute lower implied risk discount rates on new business to changes in either contract terms or sales mix which have reduced the value of contract options and guarantees (particularly minimum interest rate guarantees).
    - Exceptions to this observation include the U.S. and Japanese implied discount rates which reflect the high value of options of guarantees.
- TEV discount rates generally increased from last year in the United States and Europe, frequently by 0.3 percent to 0.5 percent. Results were mixed outside these regions.

The second table presents the balance of the financial assumptions used in embedded value calculations that we surveyed. 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 yields 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.

Table 2: Average 2006 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	11.4%	9.4%	7.9%	8.1%	4.9%	32.0%
America Latin							
Brazil	1	NA	NA	12.7%	8.2%	4.0%	34.0%
Chile	1	NA	11.2%	7.8%	6.4%	3.0%	NA
Mexico	2	12.0%	NA	8.6%	7.9%	3.9%	40.0%
Peru	1	NA	NA	8.3%	7.4%	2.0%	NA
America North							
Canada	6	7.9%	8.6%	4.7%	4.3%	1.9%	34.3%
US	14	8.6%	6.6%	5.9%	5.0%	2.4%	34.7%
Asia / Pacific							
Australia	4	9.8%	7.8%	6.1%	6.1%	2.9%	30.0%
China	4	8.2%	3.6%	4.3%	4.9%	3.5%	33.0%
Hong Kong	5	8.1%	7.3%	5.7%	4.8%	1.4%	14.4%
India	2	8.3%	NA	6.5%	9.3%	5.3%	NA
Indonesia	2	15.1%	13.3%	NA	11.3%	6.5%	NA
Japan	7	6.6%	5.0%	2.4%	1.9%	0.5%	36.1%
Malaysia	4	9.5%	5.0%	5.8%	5.4%	2.8%	8.0%

continued on page 26

[4] ibid

Table 2: *(Cont ...)*
Average 2006 Financial Assumptions

New Zealand	2	9.0%	8.0%	6.7%	6.4%	2.6%	NA
Philippines	1	NA	NA	NA	10.5%	5.5%	NA
Singapore	1	9.3%	NA	NA	4.5%	1.8%	NA
South Korea	3	9.1%	6.1%	5.1%	5.1%	2.9%	27.0%
Taiwan	4	6.5%	2.6%	3.1%	3.2%	2.1%	25.0%
Thailand	2	NA	NA	6.4%	6.9%	1.9%	NA
Vietnam	1	NA	NA	NA	10.5%	5.5%	NA
Europe Central							
Bulgaria	1	NA	NA	4.1%	4.1%	1.9%	NA
Czech	3	8.0%	4.7%	4.2%	4.0%	2.5%	24.0%
Greece *	2	7.0%	NA	4.2%	4.1%	1.9%	NA
Hungary	3	10.5%	9.1%	6.8%	7.0%	2.5%	20.0%
Poland	4	8.8%	6.7%	5.6%	5.3%	2.4%	19.0%
Romania	1	9.4%	NA	6.6%	6.4%	1.9%	NA
Russia	1	NA	NA	7.4%	7.2%	5.5%	NA
Slovakia	2	8.5%	5.3%	5.0%	4.5%	2.5%	19.0%
Europe Western							
Austria *	4	7.5%	4.8%	4.0%	4.1%	1.8%	NA
Belgium *	8	7.5%	5.4%	4.3%	4.1%	1.9%	NA
Finland *	1	7.4%	NA	4.0%	3.9%	NA	NA
France *	11	7.2%	5.7%	4.2%	4.0%	2.1%	34.3%
Germany *	9	7.4%	5.5%	4.6%	3.9%	2.1%	39.9%
Ireland *	6	7.3%	5.7%	4.0%	4.0%	3.9%	12.5%
Italy *	9	7.2%	5.6%	4.4%	4.0%	2.1%	35.7%
Luxembourg *	6	7.4%	5.6%	4.5%	4.1%	2.9%	25.2%
Netherlands *	11	7.4%	5.8%	4.3%	4.0%	2.1%	25.5%
Portugal *	4	7.7%	5.4%	4.4%	4.0%	NA	NA
Spain *	10	7.4%	5.7%	4.3%	4.0%	2.0%	30.0%
Sweden	2	6.8%	5.3%	NA	4.0%	3.1%	28.0%
Switzerland	4	7.1%	4.6%	3.2%	3.1%	0.8%	22.0%
UK	16	7.7%	6.7%	4.9%	4.7%	3.3%	30.0%

* euro currency zone

Several observations can be made concerning Table 2 when compared to similar data published last year:[5]

- Asset returns almost universally increased in Western Europe and North America, generally increased in Central Europe and were mixed in Asia.
- Inflation rates did not follow a distinct pattern, which is somewhat surprising given the general increase in interest rates.

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. For those companies calculating MCEVs, the actual size of the investment premiums is not important, as any differences relative to government bonds are backed-out in the calibration of the risk discount rate. What is important for these companies is the definition of the risk-free rate of return (e.g., government bond yield, swap yield) and whether, for illiquid liabilities, there is any addition for an assumed liquidity premium.

- 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.

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

[5] ibid

- Risk premium—the excess of the traditional 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%	0.0%	3.0%
America Latin					
Brazil	10.9%	NA	NA	4.5%	4.2%
Chile	4.3%	NA	4.8%	1.4%	3.4%
Mexico	4.9%	5.0%	NA	-0.1%	4.0%
Peru	6.3%	NA	NA	0.9%	5.4%
America North					
Canada	3.2%	3.5%	NA	0.6%	2.4%
US	2.9%	3.7%	1.5%	1.1%	2.4%
Asia / Pacific					
Australia	3.1%	3.8%	1.8%	0.1%	3.1%
China	5.0%	4.7%	0.6%	0.6%	2.0%
Hong Kong	3.5%	2.9%	NA	0.8%	2.5%
India	5.2%	0.2%	NA	-1.6%	4.1%
Indonesia	6.0%	4.0%	2.2%	NA	5.0%
Japan	4.5%	4.9%	3.1%	0.6%	1.2%
Malaysia	3.1%	4.1%	0.8%	0.8%	3.3%
New Zealand	3.1%	3.0%	2.0%	0.3%	3.9%
Philippines	6.0%	NA	NA	NA	5.0%
Singapore	2.4%	4.8%	NA	NA	2.8%
South Korea	3.8%	4.0%	1.0%	-0.1%	2.2%
Taiwan	3.5%	4.1%	0.4%	0.5%	1.4%
Thailand	5.2%	NA	NA	0.3%	4.0%
Vietnam	6.0%	NA	NA	NA	5.0%
Europe Central					
Bulgaria	3.8%	NA	NA	0.0%	2.2%
Czech	4.1%	4.0%	0.8%	0.0%	1.7%
Greece *	3.0%	2.9%	NA	0.1%	2.4%
Hungary	3.1%	3.4%	2.3%	0.1%	4.3%
Poland	3.6%	3.5%	1.1%	0.3%	2.8%
Romania	4.3%	3.0%	NA	0.2%	4.5%
Russia	4.1%	NA	NA	0.2%	1.7%
Slovakia	4.3%	4.0%	0.9%	0.0%	2.1%
Europe Western					
Austria *	2.9%	3.4%	0.7%	0.1%	2.2%
Belgium *	3.3%	3.4%	1.3%	0.3%	2.2%
Finland *	2.9%	3.5%	NA	0.1%	NA
France *	3.0%	3.2%	1.7%	0.3%	2.0%
Germany *	3.5%	3.7%	1.8%	1.3%	2.0%
Ireland *	3.0%	3.3%	1.7%	0.1%	0.1%
Italy *	2.6%	3.2%	1.6%	0.7%	2.0%
Luxembourg *	3.3%	3.4%	1.6%	0.5%	1.3%
Netherlands *	3.1%	3.3%	1.8%	0.3%	1.9%
Portugal *	2.9%	3.8%	1.5%	0.7%	NA
Spain *	3.0%	3.4%	1.7%	0.5%	2.1%
Sweden	NA	3.0%	1.5%	NA	0.7%
Switzerland	4.5%	3.9%	1.5%	0.5%	2.0%
UK	3.0%	3.1%	2.1%	0.3%	1.3%

* = 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, except in North America and several other countries.
- Property premiums generally decreased or remained level.
- Credit spreads increased or decreased in equal proportions.
- Real returns generally increased except in Asia.

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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[6] for embedded value calculations. Seventeen of the 28 companies surveyed disclosed stochastic market assumptions in their 2006 European embedded value (EEV) reports. Averages of several of these assumptions are shown in Table 4 below (volatility may also be referred to as standard deviation).

Table 4: Sample Stochastic Assumptions

	Companies	Stock Yield	Volatility	Property Yield	Volatility	Bonds Yield	Volatility	Type
Europe	11	6.7%	21.0%	5.4%	14.1%	4.0%	7.0%	Government
Japan	2	3.0%	18.5%			2.2%	10.2%	Government
So. Africa	1	11.4%	22.0%	9.8%	15.0%	7.9%	13.0%	Government
So. Korea	2		36.4%			5.1%	6.4%	Government
Switzerland	2		18.4%		17.0%	3.3%	17.4%	Government
UK	9	5.0%	20.5%	4.5%	15.9%	4.8%	6.7%	Government
US	9	8.0%	19.2%		16.9%	5.1%	9.4%	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.

Six companies disclosed the number of scenarios used to calculate the values of options and guarantees. As can be seen from the table below, four of the six companies use 1,000 scenarios.

Scenarios	Number of Companies
100 to 200	1
1,000	4
5,000	1

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 continue 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. ☐

[6] See http://www.cfoforum.nl/ for more information on the European CFO embedded value guidelines

Actuarial Involvement in Road Accident Fund Claims in South Africa

By Greg Whittaker

Whilst not required by South African Law, courts in South Africa place a strong emphasis on actuarial evidence in damages claims. The vast majority of damages claims passing through South African Courts arise out of road accidents—in 2004 alone there were 12,709 deaths on South African roads. This article briefly describes the background of the Road Accident Fund and actuarial involvement in assessing the amount of damages arising from road accidents in South Africa.

The Road Accident Fund

The Road Accident Fund (RAF) is the product of a long history spanning more than 60 years, which commenced with the introduction of compulsory motor vehicle insurance through The Motor Vehicle Assurance Act of 1942. This statute provided for compulsory insurance to ensure victims could recover damages, which were caused unlawfully by motor vehicles. The main thrust of the initial legislation was to afford protection to persons not in or on a particular vehicle, i.e., pedestrians. During the 1960s it became apparent that certain insurance companies had insufficient income to cover claims with the result that several companies were liquidated. In 1965, the Motor Vehicle Accident Fund was established to act as re-insurer to insurance companies which undertook compulsory MVA insurance.

From 1942 to 1986 the legal basis and the funding of the MVA system essentially remained unchanged. The Motor Vehicle Accidents Act of 1986, however, changed the compulsory insurance system with its statutory annual premiums to one funded by a levy on fuel sold. The levy in 2007 is 41.5 South African cents per litre of octane petroleum. Petroleum prices are set by the South African Government and at present the price of one litre of octane petroleum inland is R 6.88. The average exchange rate in 2007 between the United States and South Africa has been around R 7.16 to $1.

The 1986 Act also introduced the agency system in terms of which insurance companies could act as agents for the MVA Fund to handle and settle claims. The agency system was undesirable and ineffective and was phased out from 1993 to 1997 and now all claims are attended to by the RAF. The Road Accident Fund Act of 1996 came into operation on May 1, 1997. This act established the present RAF whose objective is to pay compensation in accordance with applicable statutes for personal loss or damage wrongfully caused by the driving of motor vehicles.

The present MVA system indemnifies the driver or owner of a motor vehicle against liability incurred as the result of loss or damage wrongfully caused to another person in road accidents. The RAF only indemnifies the driver or owner to compensate for losses suffered due to bodily injuries sustained or the death of a person, and not also for liabilities which the driver or owner may incur for damage to property (e.g., damages to motor vehicles, personal affects, buildings, luggage or goods conveyed in a vehicle). Common law principles of wrongdoing are incorporated in the legislation. Thus during the assessment of claims the respective degrees of fault of the victim and the wrongdoer have to be determined. The victim's claim is reduced by his own degree of fault or blame for the accident. Claims fall under various types of damages as described below.

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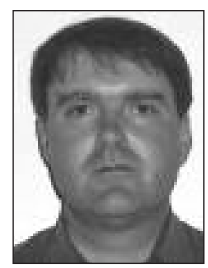

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Treatment of Claims

Personal Injury Claims

Claims for personal injury under the RAF Act are separated into various types, viz.

- Past medical and hospital expenses
- Future medical expenses
- Past loss of earnings
- Future loss of earnings
- General damages.

Under personal injury claims, past medical and hospital expenses can be recovered from the RAF provided they can be proved by the claimant. Future medical expenses are normally settled via an undertaking by the RAF and also do not require actuarial computation. An undertaking is simply a contract between the RAF and the victim by which the RAF reimburses any reasonable expenses that the victim incurs as a result of the motor vehicle accident. The victim has to incur the cost first and then that cost is recovered from the RAF—a system that has come under criticism especially from seriously injured victims. General damages are damages paid for pain and suffering, permanent loss of amenities of life, disfigurement and emotional trauma. General damages are normally awarded by reference to past cases and do not require actuarial involvement.

Actuarial involvement in personal injury claims normally extend to computations in respect of past and future loss of earnings only. The future loss of earnings component however is typically the largest component of the total amount of damages in larger RAF claims.

Death Claims

Claims in the event of a death under the RAF Act are separated into claims for:

- Funeral expenses,
- Past and future loss of support and
- Emotional shock.

Under death claims, reasonable and necessary funeral expenses can be recovered from the RAF. In addition, if a claimant is proven to have suffered psychological injury (for example the deceased's spouse may have been witness to the accident), then a claim for psychiatric counseling may succeed. Neither of these components requires actuarial input.

Actuarial involvement in death claims extend to computation in respect of past and future loss of support only.

Actuarial Involvement

Damages for both past and future loss of earnings and past and future loss of support are settled by means of a lump sum capital payment. Legislation was drafted in 2006 to change this system to allow the RAF to settle damages by means of monthly instalments, but there have been numerous problems and challenges to the legislation to date. At this stage the exact operation is still murky and in some instances the RAF will continue to settle losses under the above-mentioned types of damages with lump sum payments.

Past and Future Loss of Earnings Computations

The information required to perform the actuarial calculations will normally be supplied by the claimant's legal representative. In this regard, details of the claimant's date of birth, date of accident, earnings at the date of the accident and earnings since the date of the accident (if any) will normally be gathered by the attorney.

The projection of earnings had the accident not occurred and the projection of earnings now that the accident has occurred (if any) will be ascertained from various medical-legal reports such as those prepared by remuneration consultants or industrial psychologists. Alternatively the attorney will provide specific instructions in this regard.

Evidence in respect of earnings is normally provided by means of pay-slips, personal income tax returns and an employer questionnaire. There is no standard employer questionnaire and often the employer omits relevant details; hence, the actuary needs to take great care in dealing with such evidence.

Factors that are normally commented on by the relevant experts will include the likely retirement age of the claimant had the accident not occurred, the likely retirement age of the claimant post-accident (if the claimant is still employable) and any reduction in life expectancy as a result of the accident. The actuary may also conduct telephonic interviews with the various experts or with the employer to ascertain additional details such as membership in an employer pension fund and fringe benefits that may be included in the computations, such as bonuses.

Once all the relevant details have been ascertained, the past and future loss of earnings is computed. In particular, personal income tax is applied as the claimant is not liable for taxation on the award for past and future loss of income. No interest is added to past losses, but allowance is made for salary inflation from the date of the accident to the date of computation. Future losses are determined by allowing for salary inflation (and possibly merit or promotional increases depending on the advice of the remuneration consultant or industrial psychologist) and then discounting these losses at the assumed rate of investment return. The probability of survival from year to year is factored into the computation and is based on the claimant's post-accident life expectancy.

Essentially, the computation is the present value of an after tax earnings stream. The net discount rate (i.e., the difference between the rate of interest and the base rate of salary inflation) typically ranges from 2.5 percent to 2.8 percent per annum compound. There is no case law that stipulates the net discount rate to use, unlike countries such as the United Kingdom where a net discount rate of 2.5 percent per annum is prescribed by statute.

As mentioned earlier, the computation is based on the post-accident life expectancy of the claimant. Claimants are normally subjected to rigorous medical tests and in recent times this has led to certain claimants being found to be HIV-positive. This presents a challenge in projecting future life expectancy within the broader controversies surrounding anti-retroviral treatment in South Africa.

Past and Future Loss of Support Computations

For loss of support computations, similar information is required for the deceased as that listed under the requirements for personal injury claims. In addition, dates of birth of all eligible claimants are required. Generally the spouse (or partner) and children of the deceased have valid claims. South African Law does not permit claims on behalf of siblings, grandparents or grandchildren. Parents may succeed with a claim provided they can prove financial dependence.

If the spouse of the deceased was not employed at the time of the death but subsequently takes up employment due to financial hardship, then the claim is computed on the basis that she is not working. That is, the spouse is under no duty to mitigate her losses due to the unlawful death. If the spouse was employed at the time of the accident then details of her earnings are also required in order to determine if there is a claim.

In such instances South African Law requires that the income (after tax) of the deceased and the income (after tax) of the spouse be pooled. The income is then apportioned (the courts have come to accept a formula allocating two shares of the income to an adult and one share to a child) between each family member to determine their share of the family income. Computations then proceed on the basis that breadwinners look after themselves first. If there is any residue between their own net income and their share of the combined family net income then that is allocated to the dependents.

The financial value of loss of support is assessed by taking into account the value of the chance of receiving the support for each dependent. This involves assessing the proba-

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> "Actuaries have already made a significant contribution to the field in terms of past case law and will continue to contribute to this specialized area with their unique skills set."

bility of survival of the deceased from the date of the accident and the probability of survival of the dependents from the date of computation (usually the present time) in future. Mortality in respect of children is usually ignored as this has a negligible effect on the overall amount. Proof must be provided to substantiate the age to which a child will be dependent—this is normally age 18 for a school leaver or age 21 or 22 for a university student. The particulars of the case have to be assessed and relevant evidence (such as university enrolment certificates) must be provided.

Adjustments to Claims

In South African Law, any life insurance or pension fund monies paid to the dependents are not deductible from their claim for damages due to unlawful death, so that an element of double compensation is inherent in the system. However, claims are adjusted for the chances that the spouse may remarry and for the accelerated receipt of inheritance monies (excluding life insurance and pension fund monies.) Remarriage rates are based on culturally specific tables derived from marriage and divorce census data. Claims are also adjusted for general contingencies negotiated by the attorneys for items such as the chances of unemployment and savings due to not incurring work travel expenses.

In personal injury matters, any employer disability pension serves to reduce the claim, whereas personal insurance policies held by the claimant (not related to the contract of employment) do not reduce the claim.

The RAF is the primary payer in the presence of a Workmen's Compensation claim. The Office of the Compensation Commissioner that handles Workmen's Compensation claims in South Africa recovers their disbursements from the RAF.

Conclusion

Whilst the computation of damages claims applies fairly basic actuarial principles, the area presents many challenges and provides a broad grounding in other areas such as retirement funds, human resources, demography, insurance and social security. Actuaries have already made a significant contribution to the field in terms of past case law and will continue to contribute to this specialized area with their unique skills set. ☐

The University of the West Indies Actuarial Society

by Shani Bryan

The University of the West Indies Actuarial Society (UWIAS) was launched in 2002 at the University's Mona campus in Jamaica. Membership is open to all students studying actuarial science and associate membership to faculty, staff and students'spouses. The Society's main purpose is to assist students in understanding the professional field of actuarial science, as well as to foster interaction and to facilitate communication between students and prospective employers.

The first Executive Committee, which served from 2002-2003, was inspired by a wish for more interaction with the actuarial community and integration of the actuarial science year groups at the university. In the first year of the club, two members of the Caribbean Actuarial Association, Mrs. Janet Sharp, FSA, and Mr. Astor Duggan, FIA, visited and shared their different perspectives on actuarial practice with the members. Actuarial students have had an open invitation to attend the student sessions whenever the Caribbean Actuarial Association's (CAA) conference is held on the island.

UWIAS hosted its first annual Awards Ceremony and Dinner on Sunday Feb. 11, 2007 at the Terra Nova Hotel. This provided an opportunity for interaction between actuaries, other members of the CAA and actuarial science students, whilst honoring top students for excellent academic performance.

The function was attended by many top Jamaican actuaries, including the guest of honor, the first black female fully certified actuary (FIA 1970), the Honorable Mrs. Daisy McFarlane-Coke O.J., C.D., FIA, affectionately known as "the grandmother of all Jamaican actuaries."

Guest of honour Hon Daisy McFarlane-Coke (left) and Director of Actuarial Sciences Mr. St. Elmo Whyte (2nd right) mingle with the UWIAS Executive: President Rohan Hall, Secretary Shani Bryan, Vice President Kerron Blandin, PRO Karla Guthrie & Treasurer Tameeka Howard

Ms. Cathy Lyn FSA, FIA, newly appointed Society of Actuaries' Ambassador to Jamaica, graced the attendees with an inspiring speech. She commended the UWIAS' efforts in bringing together the practicing actuaries and the students, stating that the "mixing of generations is part of developing a culture which contributes to strengthening the profession and building bonds which are good for the future." She also called for actuaries to make contributions in areas including: the development of social policy, identifying and addressing relevant issues of concern to the profession, publishing a position statement or issuing a press release and contributing to policy in health, long-term care, and personal

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finance. Ms. Lyn also mentioned, in particular, the current work needed to strengthen the retirement system as pension reform takes place in Jamaica.

The prize-giving segment of the event sought to recognize outstanding performance for the previous academic year. Awards for obtaining first class honors degrees in actuarial science went to Andre Brown, Anika Peart, Candice Green, Mikhail Francis and Shayna Stennett.

Awardees of first class honours degrees in actuarial science in 2006 : Mikhail Francis, Candice Green, Andre Brown, Shayna Stennett and Anika Peart (missing from photo)

Recipients of awards for exceptional performance in the second year were Candace Rollock, Jeneve Jackson and Rohan Hall; while Gillian Jackson, Keneisha Powell, Kezia Dalrymple, Rohanne Beckles and Shani Bryan were honored for outstanding performance in the first year. Additionally, Mr. W. St. Elmo Whyte, FIA, and Ms. Yvette Johns, ASA, director and coordinator of the actuarial science programme respectively, were awarded tokens of appreciation for their contributions to the UWIAS.

The UWIAS' main project, the mathematics tutoring program, was the focus of President Rohan Hall's speech. October and November of 2006 saw the Society at Jamaica College, a well-known high school for boys on the island. The aim was to tutor mathematics at the Caribbean Advanced Proficiency Examinations (CAPE) level (equivalent to GCE A Levels) and to make the students aware of the field of actuarial science. Students were given overviews of topics covered in class and individual attention. In March and April of 2007, attention was directed to Holy Childhood High School (for girls) where a similar program is being undertaken.

Mr. Hall also implored actuaries and their organizations to follow the lead of the CAA in assisting actuarial science students by offering summer internships or establishing a scholarship fund. Recently, the CAA donated US$10,000 to the actuarial program for purchasing books for students.

Please visit the UWIAS Web site at *http://uwiactscisoc.tripod.com/index.html* ☐

Pension Regression

by P.G. Alistair Cammidge

"It is too simple to say that work until you drop is the answer to the pensions problems we face."—General Secretary of the (British) Trades Union Confederation

First, the good news—mortality at the older ages is improving at the best trot ever!

Second, the bad news—the rate of improvement far exceeds actuarial projections!

In Japan, the babyboom 'dankai' (big cluster) generation is reaching normal retirement age at 60. In 2005, 3.3 workers supported each Japanese retiree; by 2015 that ratio is expected to have fallen to 2.4.

How can this tsunami of retirees be supported? The issue confronts policymakers in all advanced economies.

Traveling from a pattern of islands off the northeast coast of the Eurasian landmass to an archipelago off its northwest shore, we reach the British Isles—where a week is a long time in politics. With politicians playing politics, retirees-to-be are left to muddle through—under a terrible malediction. I must give favorable mention to the politicians' answer to Britain's pension problems: In 1997 one policymaker imposed a GBP (pounds) 5 billion (US$10 billion) per annum tax on company pension plans. Taxes —added to low returns, increasing longevity and inadequate advance provision - have broken the backs of defined benefit (DB) pension funds, causing many to close and some to collapse—while the Department of Tramways, Fine Arts and Pension Supervision lolled languidly. The European Court has found British pension supervision 'inadequate.' The High Court has ordered the British Government to review its decision not to compensate pensioners of failed funds. The government has said compensation would cost GBP 15 billion (US$ 29 billion).

Research by a transatlantic firm of consulting actuaries tells us that in Britain the days of two-thirds final salary pensions are gone—today's employees must expect far less.

We have regressed—we have gone far backwards!

Mortality and Interest Rate Risk in Pension Plans

In the United Kingdom—as in the United States—corporate defined benefit pension plans are becoming extinct. Defined benefit (DB) pension plans face both mortality and interest rate risks. Currently many British DB pension plans are being closed to new entrants; later closed plans have benefit accrual terminated for remaining members. In happier times, open and growing DB plans could control their mortality risk by employing dynamic mortality tables. For today's closed and contracting DB plans, the mortality risk is much greater—particularly at the higher ages. In mathematical terms, the ratio of the standard deviation to the expected number of survivors increases ever more rapidly with age.

DB pension funds may mitigate interest rate risk by investing in cashflow-matched bond portfolios. In the United Kingdom, the longest 'gilts' (British government security) mature in 2038, 2046 and 2055. (There are small volumes of 'undated' gilts redeemable at government option.) Corporate bonds tend to be shorter but offer higher redemption yields. Similarly, wage inflation risks can be reduced by investing in index-linked gilts.

Traditionally, DB pension plans handled their risk from improving mortality by employing projected (static) mortality tables or dynamic mortality tables incorporating rates of mortality improvement (for each age and sex). Today the grave problem of mortality risk can be reinsured and soon securitized.

Dark clouds above the heads of working folk have a silver lining for insurers acting as pension undertakers. Indeed, so lucrative is undertaking that new firms of pension undertakers are being formed to challenge the old family firms. In the United Kingdom, buying out corporate pension plans (using bulk purchase of payout and deferred life annuities) is the acceptable face of opportunism.

In the pension buyout market a specialist pension broker will approach highly-reputed insurers on behalf of a DB pension plan, provid-

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ing details of current and/or deferred pensioners and contingent beneficiaries. Insurers place competitive quotations of their charges to assume the risks. The low bid wins! The premium may be a one-off for a full buyout, installment premiums over a period of years or segmented—with only the risks associated with pensioners being transferred.

A new alternative is to securitize the longevity risk faced by both DB pension plans and insurers writing life annuities.

A mortality or survivor derivative is a financial instrument with a mortality-dependent payout. The first proposals were "survivor" or "longevity" bonds whose coupons are proportionate to the survivors of some cohort of lives.

The first survivorship bond was proposed in 2001. In 2005, the European Investment Bank (EIB—a tentacle of the European government), a leading French retail bank and a Bermuda reinsurer launched a GBP 540 million 25-year longevity bond, with coupons proportionate to the number of survivors of the English and Welsh male population aged 65 in 2003. Projected coupons were valued at LIBOR minus 35 basis points to give the issue price. The greater volatility of elder mortality makes little difference in pricing—but a big difference in hedging! (Payment indexation was lagged to allow for calculation and publication of statistics.)

Observe the absence of a specific capital repayment—thus the bond mimicked a portfolio of employee pensions. Purchase of such a bond would considerably mitigate a DB plan's ongoing mortality improvement risk by spreading it across the market. Combining heavyweight intellect with lightweight judgment, the market proved excessively cautious about a little-understood instrument; the bond was only partially subscribed, then withdrawn for redesign. However, the banks received much favourable publicity!

Several reasons excuse the slow take-up of the bond by the market. At 25 years, the bond provided a less effective hedge than a longer bond. Similarly, it would be a less effective hedge for other age cohorts and females. Perhaps the most serious problem was the large amount of capital required in relation to the reduction in risk exposure.

Securitizing excess mortality has been more successful. The first such bond was issued by Swiss Re in December 2003. Maturity was four years, with investors receiving a coupon of US LIBOR plus 135 basis points. The principal repayment was at risk if the weighted average of general population mortality in five specified countries exceeded 130 percent of the 2002 level in any year. In April 2005 the Swiss issued a second bond and in November 2006, the Swiss placed $ 442 million in a catastrophe mortality securitization on behalf of AXA. The issue was oversubscribed.

Other mortality and survivorship instruments have been suggested. An example is a survivorship swap in which two parties agree to exchange two payments at an agreed future time. One payment is fixed; the other is dependent upon some mortality index or population cohort. Such an arrangement does not require the expense of a bond issue—just two willing parties.

Investment banks and financial institutions are investing time and effort in solving the problems associated with longevity, for example the increased stochastic volatility of mortality at the older ages. Longevity will be the new frontier for financial derivatives!

But this is old claret in new bottles. Does it amount to any more than rearranging deckchairs on the Titanic while British pensions disappear beneath the waves? The reality check just bounced! "What is to be done?" the late V.I. Ulyanov (a.k.a. Lenin) famously asked.

Public sector pensions begin at 60—private sector employees will have to work till they drop! Workers of the World—Unite! You have a right to a pension!

Further reading:

Blake, D., A.J.G. Cairns and K. Dowd. 2006. "Living with mortality: longevity bonds and other mortality-linked securities." Presented to the Faculty of Actuaries, 16th January 2006. ☐

US GAAP for International Insurers

After two well-attended US GAAP seminars in Hong Kong during 2006 and 2007 and successful US GAAP seminars in Amsterdam and Sao Paulo, Brazil during 2007, the International and Financial Reporting sections are planning for additional seminars outside North America during 2008. The need for such seminars is demonstrated by over 300 attendees and some sessions oversold. Locations under consideration for 2008 include Hong Kong, Mexico City and Tokyo. Please stay current with upcoming developments at the Society of Actuaries Web site.

The Pacific Rim Actuaries' Club of Toronto Calendar of Events:

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

The next PRACT business workshop will take place in November 2007

Our Annual Chinese New Year Dinner Meeting will be held in February 2008, with an exciting speaker from the United Kingdom who will discuss various topics concerning the insurance industry in Asia.

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

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

2008 IAA Sections Colloquia

Joint IACA/IAAHS/PBSS Colloquium
Boston, MA, United States
May 4-7, 2008
Web site: *www.actuaries.org/Boston2008*

38th ASTIN Colloquium
Manchester, United Kingdom
July 13-16, 2008
Web site: *www.actuaries.org/ASTIN2008*

18th AFIR Colloquium
Rome, Italy
Oct. 1-3, 2008
Web site: *www.actuaries.org/AFIR2008*

Joint Risk Management Section Creates International Committee

ERM is an emerging actuarial specialty that is a new and important issue with insurers, regulators and rating agencies across the globe. The Joint Risk Management Section has created an International Committee to help to link our risk management efforts in North America to the actuarial risk management efforts in other countries in other parts of the world. We are working with actuaries in other countries to create translations of our newsletter and forming an international network of actuaries who want to work together on risk management issues. For more information, contact David Ingram *david_ingram@sandp.com.*

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Introducing the Chartered Enterprise Risk Analyst (CERA) Designation

A new designation—the Chartered Enterprise Risk Analyst (CERA)—is now available to help students and business professionals prepare for and seize opportunities in the evolving discipline of enterprise risk management (ERM) within broader financial services, insurance, and pension markets.

The curriculum was carefully developed to meet current and future market needs while providing a rigorous treatment of critical ERM topics, including actuarial approaches to risk. Successful candidates will receive the Chartered Enterprise Risk Analyst (CERA) designation and become an associate of the Society of Actuaries.

The required examinations will be provided by the SOA and will include the following:

- Exam P (Probability)
- Exam FM (Financial Mathematics)
- Validation by Educational Experience (VEE) Economics
- Exam M (Actuarial Models) segment MFE
- Exam C (Construction of Actuarial Models)
- FSA-level Finance/ERM Exam (Advanced Finance / Enterprise Risk Management)
- FSA-level Finance/ERM Module (Financial Reporting and Operational Risk)
- Associateship Professionalism Course

To learn more about the Chartered Enterprise Risk Analyst (CERA) designation, e-mail Martha Sikaras at *msikaras@soa.org* with your questions.

Feature Your Country

and win **$US 2000!!**

Dear Ambassadors and International Section Members,

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 31 December 2007. 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 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, 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:

- anyone who is an 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, .eps format with a print resolution of at least 300 dpi.

Deadline: Please e-mail your submission to Sofi Garcia at sgarcia@soa.org by 31 December 2007. Please give full contact details for the author(s).

Selection: The Council will select a winner in early March 2008, 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 early April 2008.

We look forward to hearing from you.

Sincerely,

Frank Buck

Chair International Section

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