Issue 155 November 2010

Actuary Australia

More Than a Beautiful Mind – Guy Horton

Professionalism Course – Sydney

Protection Strategies – Analysis of Their Impacts on Market Stability

The Impact of Liability Profile on Investment Strategy for Insurers

Softly, softly

It can be those soft skills that can make or break us as actuaries – or determine where the ceiling is in our career.

I cringed a little in reading Melinda's September CEO column that talked about our strengths and weaknesses as actuaries, as I recognised some of those areas that I need to improve on. I encourage everyone to take opportunities such as the Step Up program or whatever else provides you with the training you need to break through in something that may be holding you back.

We are all very good at coming up with reasons not to do something, but it really comes down to your priorities. Is that time commitment of x hours a week for y months going to deliver enough benefits to justify it? Is it not worth the time – just in case? As we come into the new year in a month or so, it would be the perfect time to sit down with a pen, paper and champagne to set those personal goals.

As you can see from a number of programs offered this year by the Institute they have recognised this potential gap in our training and are looking to provide some tools to assist. Take up the challenge and become the best actuary you can be!

In that vein (and what inspired this editorial) the Talent Finders Committee have offered to intermittently provide profiles of interesting and inspiring actuaries in 'More Than a Beautiful Mind' – so watch this space. Gloria Yu is also writing about the Step Up Program.

Our more technical articles relate to investment strategies – the impact of the liability profile and portfolio protection. ▲

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Actuary Australia

Contributions
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What's New on the Web – November

Renew your membership in four easy steps

Membership renewals notices for 1 October 2010 – 30 September 2011 are now available online www.actuaries.asn.au/renewals

New Council Members Announced

The Institute would like to congratulate the following successful candidates who will join Council in 2011:

- Caroline Bayliss
- Jules Gribble
- Andrew Huszczo
- Estelle Pearson
- Stephen Woods
- Gloria Yu

For further information please contact Anne Peters (Company Secretary and Returning Officer) by phone +61 (0) 2 9239 6124 or email anne.peters@actuaries.asn.au

Simple Search Tool

We're pleased to announce that our simple search tool has been relaunched.

The tool makes it easier to find the 3,200 documents, audios and videos which are on the website. It can be found under 'Information and Knowledge' then 'Search Resources'.

If you cannot find something, please email actuaries@actuaries.asn.au for assistance.

Professional Standards News

A new professional standard dealing with the preparation of benefit certificates has been released.

An Exposure Draft of a proposed Professional Standard 600 (Financial Condition Reports for Private Health Insurers) and revisions to Professional Standard 200 (Actuarial Advice to a Life Insurance Company or Friendly Society) have been released for comment.

Diary Dates

24 November	Sydney	ERM Community – Project and Implementation Risk
29 November	Sydney	Business Writing Skills CPD Course
30 November	Melbourne	Insights Networking – Banking and Finance
2 December	Sydney	Retired Actuaries Group, Sydney
11-13 April 2011	Sydney	Biennial Convention

contents

More Than a Beautiful Mind

GUY HORTON IN PROFILE

This is the first in a series of articles brought to you by the More Than Maths website team, a subdivision of the Talent Finders Committee. To give prospective students a flavour of the actuarial profession and to showcase the breadth of opportunities available, we are profiling a range of actuaries. We thought you would enjoy reading about them too.

It's a far cry from the farm...

Guy Horton was a farm boy who wanted to drive trucks. As a backup plan, he went to school and somehow ended up becoming an actuary. His work has taken him from Sydney to countries such as Japan, USA, Brazil, Chile, Mexico, Thailand and now Egypt, where he is Managing Director of Commercial International Life in Cairo.

I met Guy at university, where we lived at the same residential college. He studied hard, but he also played hard. He made friends easily, was never at a loss for clever things to say, and was always doing something fun – motorbikes, beach, sports, parties and even singing and dancing in the college's musicals. During the holidays he would go back to the farm to shear sheep.

Guy first heard about the actuarial profession from his math teacher. Having now worked in Australia and abroad, he says that the basic skills and knowledge of actuaries are very well respected in all parts of the world.

A good career, if you want to be judged on your abilities alone...

To Guy, the actuarial profession is "one of the most pure meritocracies" he has found: "[It] doesn't matter what your race, religion, gender, age may be, if you are good at your work then you will find advancement … I didn't go to school [until Year 11]; I was one of six children, and grew up, for a while, without electricity; none of that matters in my career." For example, in Brazil and Thailand, where Guy has worked, most actuaries are women. Within the actuarial profession, they find there is no disadvantage to being a woman – there is not the 'boys' club' mentality that some other professions exhibit. There is a level playing field. "So," he says, "in my limited experience, it is a good career if you want to be judged on your abilities alone."

Making the most of opportunities...

Guy may not have planned to be an actuary when he was growing up, but he certainly made the most of the opportunities presented to him through his career. In just 15 years, he has worked his way up from junior actuarial analyst to Managing Director, while living and working on five different continents and gaining a broad range of experience (see 'Guy's Career'). I asked Guy how he managed to build such an amazing career. He said, simply, "Open yourself up to possibilities and see what is out there, where you might be able to be useful, and seize opportunities that come up." He said that once you prove you can be successful in a different country and culture, you become highly valuable and companies are prepared to pay well for that kind of skill and experience.

While he modestly talks about luck and accidents that furthered his career, I would say his success is also due to his willingness to learn from anyone and everyone he meets: "It is the little encounters with multitudes of people who are impressive in some particular way that have been the biggest influence on me, rather than particular individuals of some significance. Perhaps the lesson is that people whom you might find distinctly unimpressive in general often have some aspect that can be impressive. Many influential or important people are more than a little flawed in other aspects of their lives. It has been enjoyable to have come across so many people, in so many different places and situations, and without trying you still tend to get something from each of them."

On living and working overseas...

After completing his actuarial qualifications, Guy worked on several projects overseas, while still being based in Sydney. He has been living and working outside of Australia since 2001. "Once you enter this world it can be a little difficult to get out, as the jobs on offer are much more interesting than you would be offered back home, the pay is generally significantly higher, and in emerging markets there are lots of benefits that people get used to (drivers, cars, maids, club memberships, etc). For a first time ex-pat, these benefits might not be sufficient to make up for what they are missing at home, but for long-time ex-pats these things make it home.

"There are lots of downsides – you miss friends' weddings, the births of nieces and nephews, body surfing at Bondi Beach, living in low-pollution cities (possibly). You get strange fevers and bugs in remote places and wonder what they are. You don't blink an eye at certain bizarre things people say, and others at home are sometimes shocked at things you say because your culture no longer quite fits theirs.

"On the plus side, perhaps you speak three or four unusual languages, feel at home in up to half a dozen cities around the world, have furnished your house with things you found and liked from four continents, and have been paid all the while to do so."

On life in Cairo...

Guy's latest career move brings him a whole new adventure in the lively and mysterious city of Cairo. "Life in Cairo is a little chaotic – more so than Rio de Janeiro or Bangkok. There are no real traffic rules, there is garbage in the streets, there are traffic jams at 3am in the morning, nothing is close to anything else, electricity often goes out for a few minutes at just about the time you need to get up in the morning.

"But then again, everything is possible (if somewhat difficult). Home delivery of butter at midnight? No problem. A tour guide, with car and driver, to pick up your friends arriving at 5.00am the next morning? No problem. Meeting hosts are incredibly hospitable in that old Arab sense (they are aghast if after a few minutes into the meeting you have not been offered drinks). And a city with 5,000 years of history is something that cannot be ignored. You just need to remember they have had 5,000 years of experience with tourists

> "Often the people who garner the most respect in business, and this certainly applies to actuaries, are those who can break the situation, event or issue down into a simple item, walk through it with others, allow discussion and improved understanding, and present it in a meaningful and concise fashion."

and so the odds are they are somewhat more skilled than you in working out how to have you part with your money."

Secrets to Success...

Guy believes that communication skills are essential for success. "Often the people who garner the most respect in business, and this certainly applies to actuaries, are those who can break the situation, event or issue down into a simple item, walk through it with others, allow discussion and improved understanding, and present it in a meaningful and concise fashion." The key is to create a win-win outcome by increasing the overall level of knowledge and understanding across your stakeholders, which in turn contributes to their satisfaction with your work. Guy's record so far certainly gives credit to his words, and I am sure he will continue to grow from success to success. ▲

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GUY'S CAREER

Qualifications:

- Bachelor of Economics (Actuarial Studies & Finance), Macquarie University
- Fellow of the Institute of Actuaries of Australia
- Actuarial majors in Health Insurance, Life Insurance and Investments
- Graduate Diploma (Applied Finance & Investment), Financial Services Institute of Australasia

Employment:

1997-2000	Tillinghast-Towers Perrin, Sydney (with secondments to USA, Japan and Brazil): Actuarial Analyst to Consultant
2001-2003	Tillinghast-Towers Perrin, Rio de Janeiro: Consultant
2004-2005	New York Life International, New York: Assistant Vice President to International Vice President
2005-2009	Siam Commercial New York Life, Bangkok: CFO and Executive Vice President
2010	Commercial International Life, Cairo: Managing Director

Experience:

Product pricing, product profitability analysis, financial reporting, mergers and acquisitions, company valuations, joint venture negotiations, project management, business planning, strategy and development.

This has been another busy month for the Institute and its members. Our members have prepared a number of submissions across a range of areas. One that has continued to attract a lot of interest is the proposed new APRA capital standards for life and general Insurers. A great deal of work by both the Life Insurance and Wealth Management Practice Committee and the General Insurance Practice Committee went into preparing our joint submission. The seminars held jointly with APRA and the Institute, in both Sydney and Melbourne, attracted considerable interest and provided another forum for members to express their views. I have continually been impressed and encouraged by the enthusiasm and dedication among our members throughout this year.

The Council elections are well underway and I was delighted to see such a strong candidature present themselves. I am sure that each of the nominees would make a valuable addition to Council and that the profession will continue to be in good hands next year.

We have now run our fifth Professionalism Course for the year. For this year we will have been able to welcome 333 new actuaries to the profession. It is fantastic to see so many members willing to be acknowledged as actuaries from a variety of current careers. I am sure they will continue to be good ambassadors for us all.

The staging of the second ERM seminar was another highlight of the month. For those of you who were unable to attend, this was an excellent day, with engaging and enthusiastic speakers. A common theme of the seminar was communication of the risk message, including facilitating an engaged and well informed Board so that the mindset of any selected level of risk could be embedded in the organisation.

International Actuarial Association (IAA)

As I write this I am preparing to attend the (IAA) meeting, which will be held in Vienna. There are two meetings each year, where representatives from actuarial associations from round the world gather together to share views and discuss a range of common issues.

The next IAA meeting is scheduled for 7 -10 April 2011 and will be held in Sydney. This will present a chance to showcase our Institute, as well as to provide an opportunity for many of the actuaries who are usually unable to attend to be involved. As the IAA meeting will be held just prior to our Biennial Convention, we hope that a number of our international guests will also be able to stay on and join us there.

The Institute has made a significant and valuable contribution to the IAA over a number of years. One highly visible impact has been the influence we have had on insurance accounting. International standards that are aligned with Australian activities improve the ability for Australian companies to compete on the world stage. Other equally important, though less visible, contributions have been in areas such as accreditation and education, where our actuaries have contributed to ensuring all actuarial associations meet the required joining standard.

The IAA meetings are a series of individual committee meetings. Other areas covered are Insurance Regulation, Professionalism, Audit and Finance, Enterprise and Financial Risk, Mortality, Social Security, Pensions and Employee Benefits, Nominations, Advice and Assistance and the Executive. A Presidents' Forum is also held to provide an opportunity for presidents to consult together and discuss issues of common interest. The various sections of the IAA also hold meetings, including PBSS (Pensions), IACA (Consulting Actuaries) and AFIR. The meetings conclude with a Council meeting, where representatives from each association vote on issues affecting the worldwide profession.

International Congress of Actuaries – in Sydney 2022?

Another issue on the table is whether Australia should bid to hold the International Congress of Actuaries meeting in 2022. The International Congress of Actuaries is held every four years, with the most recent meeting held in Cape Town earlier this year. The South African event hosted over 1500 delegates and 373 accompanying persons with 103 countries represented. There were 98 sessions held over five days, with over 250 speakers from 35 countries. All who attended spoke highly of the experience.

We will be inviting our members, particularly our younger members, to consider whether we would like to hold this event in Sydney in 2022. If members are interested, then we will bid to host this event, and then identify a team with the appropriate skills to lay down the groundwork necessary. ▲

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Julia Lessing

Title…
Manager

Organisation...
Ernst & Young

My favourite energetic pursuit...
Chasing my four kids around, walking/ running, yoga

My favourite meal...
Dessert

The sport I most like to watch...
Any of the kids' soccer games

The last book I read (and when)...
How to get a job you'll love by John Lees – I bought it last month from the Lifeline book fair for $1, and so far it has been worth the investment.

My favourite CD...
Mixed CD burnt from my iTunes library

My favourite film...
Mona Lisa Smile – it challenges my thoughts about feminism and housewives and reminds me what a great time 2010 is to be a woman

My interesting / quirky hobbies...
I am a beginner drummer and I like to grow my own vegies

My ideal weekend day...
Sleep in, cup of tea in bed with hubby, shopping adventure to Vinnies with the kids to spend their pocket money on 'treasures', afternoon in our garden with a book or the newspaper, some backyard cricket and maybe some planting or harvesting in the vegie patch and an impromptu cup of tea or BBQ with friends

If stranded on a desert island I'd take...
My family, fresh water and sunscreen

What gets my goat…
Sydney house prices

What I wanted to be when I grew up...
I wanted an office job where I could wear a suit and high heels

Why I decided to become an actuary...
I was good at maths and learnt that actuaries earned more than maths teachers

Where I studied to become an actuary...
Macquarie University

Qualifications obtained...
BCom (Actuarial Studies), FIAA

My work history...
Actuary (Ernst & Young, Munich Re), mother (i.e. nurse, chef, laundromat, accountant, psychologist, diplomat, taxi driver etc…), barmaid, maths tutor, checkout chick and supervisor, newspaper deliverer, babysitter

What's most interesting about my role...
Working as part of a team to help clients with their problems and working with intelligent people with a range of interesting personalities

My role's greatest challenges...
As a newly qualified actuary, I'm still learning how to get the balance between a theoretically correct solution and something that is practical to implement within the given constraints of a project

Who has been the biggest influence on my career (and why)...
My husband who has always encouraged me and stepped up to the challenge of full-time parenthood to enable me to qualify as an actuary with four kids at home. I'm also lucky to have a large group of mentors who act as sounding boards for me whenever issues arise

My most important decision…
Firstly, prioritising having kids over a career (luckily I ended up getting to have both) and secondly, 'swapping' with my husband (I became breadwinner and he became stay-at-home-dad) so I could do my part III exams and qualify as an actuary

My biggest regret…
None – life's too short for regrets, and I like to see life's experiences as learning opportunities

I'm most passionate about…
helping people achieve their goals

I'd like to be brave enough to…
Relocate the family and work overseas

My proudest moment…
Qualifying as an actuary (sad, but true).

The best party I've had…
My 30th birthday last year – it was a four-day celebration starting with dinner at home with Sydney friends and family followed by a few days in Terrigal including lots of champagne with my Central Coast friends and family

My earliest memory…
My third birthday. Mum made me a Miss Piggy cake with jelly snakes for Miss Piggy's hair

My most embarrassing moment…
As a grad introducing myself twice to a client in a big group. She said "Yes, we've just met, remember?"

In my life I'm planning to change…
As often as I feel the urge

The age I would like to stay…
My current age is great – no study or nappies – but I'm also looking forward to the future

At least once in their life, every actuary should…
Go back to high school and talk to high school kids about being an actuary (Okay, I couldn't resist the opportunity to plug the Talent Finders Committee!)

My next holiday destination is…
Flynn's Beach (Port Macquarie) with the family for my birthday weekend

My best advice for my children…
Be yourself, dare to dream and never let the fear of failure get in your way of success

Four words that sum me up…
Friendly, motivated, organised, happy ▲

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The Actuarial Pulse

The Actuarial Pulse is an anonymous, web-based survey of Institute members, run on a monthly basis, giving members an opportunity to express their opinions on a mixture of serious and not-so-serious issues.

Next Survey New questions will be available in February 2011.

What would you like to know? If you have a question you would like to put to the membership, email it to editor@actuaries.asn.au

Results Report generated on 12 October 2010, 414 responses received.

This month's Pulse survey was a mixed bag of questions.

i-Products and virtual social networks

For me, it is one of the most common scenes on the way to and from work on the train: people peering into the tiny screens of their iPhones in their palms, commenting on their friends' Facebook status or scrolling through posted photos with their fingertips.

First it was iPod, then iPhone and now iPad – even if you're not an owner, these Apple products seem to surround you everywhere you go. With technology advancing by the second, the way we communicate with each other has changed immensely over the past few years, due to new tools and websites that have crept into our lives. So how far have these i-products and virtual networks penetrated into the lives of actuaries?

Do you have an iPhone?

Which of the following virtual social networking tools do you use?

Choice	%
Facebook	61%
Twitter	8%
LinkedIn	33%
Don't use any	28%
I hate them	23%

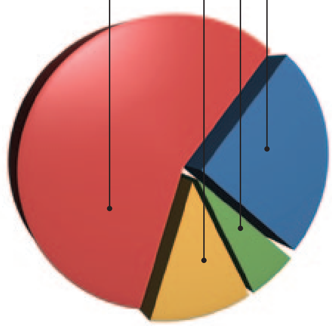
As the statistics show, Facebook seems to be quite a popular networking tool among actuaries. Twitter is less so, however one respondent commented: "Twitter is good for news once you find the appropriate feeds to follow". Most of those who don't use any have privacy concerns or think they are time-wasters. Of the 23% who responded "I hate them", some are users of the tools nonetheless and one commented: "I use them but I also despise them. Such a waste of time, but it's an addiction."

Other comments on social networking tools include ● Too many real life networks to spend time on virtual networking ● VSN tools blunt communication skills ● More blah blah from people with nothing valuable to say or do ● Out of necessity, much harder to stay in touch with people as too many people are starting to prefer Facebook to answering emails or calls ● I don't think of LinkedIn as social networking. It's more like a flag for headhunters. ● Don't use them but don't hate them – unless my colleagues are using them in work time.

Perhaps the last comment brought out a downside of Facebook which has made socialising at your work desks an ease. Do you sometimes see the easily recognisable blue banner on your colleagues' computer screens? Do you wonder how much time have they spent on Facebook already? Do you wonder if they are your 'friends'?

If you use Facebook, are you 'colleagues' on your friends' list?

Choice	%
No, colleagues are not on my friends' list	26%
Yes, current colleagues only	6%
Yes, ex-colleagues only	12%
Yes, both	56%



One of the respondents who do not have their colleagues as their friends commented: "Colleagues are at the end of the day colleagues. You should keep work professional and your personal life personal."

In the dictionary, there are two definitions of friends:

1. Somebody you trust and are fond of.
2. Somebody you think well of or are on good terms with.

Some respondents who have colleagues as their 'friends' have treated colleagues as friends under the second definition rather than the first as can be seen by the following comments

- With the exception of colleagues who are actually good friends, colleagues who send a request are added to the 'work' list that has very restricted access to my profile.
- My Facebook rule for work colleagues is that I never ask a junior team member to be a 'friend' – they might not want their boss seeing what they got up to on the weekend – but I'll happily accept if asked.
- I generally try not to comment too much on junior colleagues' posts...

Further reasons not to be too overjoyed when your colleagues add you as friends can be perceived from these comments:

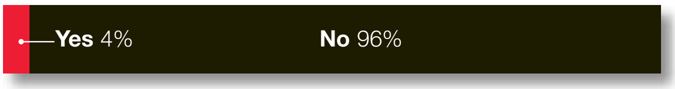
- I need them on my list otherwise I don't have enough friends!
- It's more like a people-you-know list.

And if you have colleagues on your list, you may become like these respondents who want their situations reversed:

- It limits my Facebook usage and it's hard to remove them!
- If I could do so without offending them I would remove some of the colleagues I have said yes to.

As for that latest Apple invention, the iPad, the uptake rate amongst actuaries isn't as high as perhaps I thought it would be. Although, if this question was analysed across age groups, I imagine the younger demographic would have a higher proportion of iPads.

"Do you have an iPad?



Should all future additions of Actuary Australia be compatible with the iPad?

Choice	%
Yes	56%
No	32%
Don't care	12%

Reasons the respondents who answered 'yes' include:

- If it doesn't cost much time or effort – why not? Could save a few more trees.
- One day we will all have iPads or a derivation there-of, just like we all have mobile phones now.

Reasons the respondents who answered 'no' include:

- The publication should be available to all members not just those that buy a particular brand.
- Please don't spend any of my member fees addressing such a niche need.

In general, respondents think it's a good idea on the conditions that:

a) If the benefits outweighs the cost and ideally the cost should not be paid for by the fund of membership fees;
b) Paper version of the magazine should be maintained; and
c) It should also be available on other e-readers / tablet style computers.

Politics

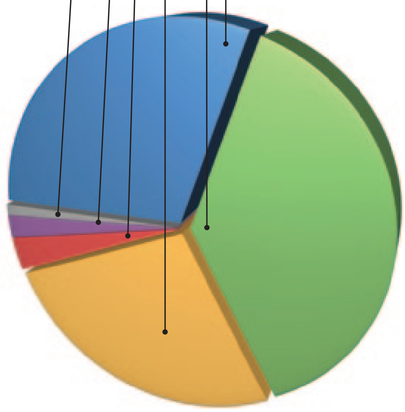
Which party did you vote for at the last Federal Election?

Choice	%
Labour	26%
Liberal / National	32%
Other	27%
Did not vote / blank	15%

Taking out the respondents who cannot vote due to eligibility or location reasons or left the question blank, it appears that actuaries are predominantly Liberal/National voters with 38% of votes, followed by 31% for both Labour and Other.

Given the hung parliament, would you vote differently?

Choice	%
No, maintain vote for Labour	30%
No, maintain vote for Liberal/National	37%
No, maintain vote for Other	27%
Yes, will switch to Labour	3%
Yes, will switch to Liberal/National	2%
Yes, will switch to Other	1%



While majority of the respondents would not change their votes, the hung parliament situation would change voting preferences for some. If another election were to be held, the composition of votes would become 38% Liberal/National, 34% Labour and 28% Other. In general, Labour would gain more votes at the expense of votes for Other parties.

Here are some comments on our current Prime Minister:

- I think Gillard will be able to handle the hung parliament, but I doubt very much that Abbott would be able to.
- Labour don't deserve to be in power as were rejected by electorate with massive swing against them. Gillard has very little credibility as a leader.

And on the hung parliament:

- Crossbench independents wield a disproportionate amount of power – for their electorate. People have seen this, so if the election was held again more people could vote independent, hoping that the local candidate can then make demands of the entire country.
- The hung parliament tends to prove democracy is not completely dead in Australia. Our Tony is a dismal failure.
- Neither party won, Australia sent a clear message that neither party is good enough. They need to lift their game. Mark Latham was right!

Random Topics

Is it about time that actuaries can take on the role of Justice of the Peace like accountants, pharmacists, etc?

Yes 15% | **No** 85%

Thanks to the respondents who have picked up that this question has been phrased incorrectly. Occupation is not a criterion in becoming a Justice of Peace (JP). The applicant's character, age, citizenship and other criteria which can be found on the Lawlink website for NSW (and similar sites in other states) are the determinants of whether someone is eligible for becoming a JP. From comments of other respondents, I gather that generally respondents had the same understanding as I had of 'JP' (which is incorrect) as people who can certify personal documents to make them official when doing applications for various reasons. These are people who are authorised to witness a statutory declaration under the Commonwealth Statutory Declarations Act 1959 and the criteria is occupation based.

People authorised to be witnesses include certified accountants, dentists, legal practitioners, medical practitioners, nurses, pharmacist, police officers, teachers, veterinary surgeons and of course, JPs. Most of the 'yes' responses have comments that we should be as actuaries, professional status would get more recognition and actuarial exams are harder than other professional exams. The 'no' response have comments about not wanting to be bothered by people asking them to certify documents.

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Given the number of universities in Australia offering the actuarial degree, do you think that Australia has too many actuarial graduates?

Yes 49% | **No** 51%

Actuaries are quite divided in opinion on this one, let's hear from the 'no' side first:

- A lot of them do not take up actuarial careers. The number working as actuaries will be limited by the jobs available. Having more actuarial students at university gives the profession more 'brand recognition'.
- Many overseas students, so few will remain in Australia.
- Provided the Institute can continue to grow and market our skills in wider fields, ensure we are relevant and pragmatic, actuarial skills are very useful in many aspects of business.
- Supply and demand will sort out any problems. More important issue is the quality of the education, and skills that the graduates develop during their education.
- Can never have too much of a good thing.

And on the 'yes' side:

- Too many graduates in total, but not enough of the right quality. Somewhere along the way the standard has slipped.
- Yes for the Australian market but no for global market.
- There are far too many and not enough cultural variety. The quality of actuaries is seriously diminishing as a result. It used to be the case that being an actuary meant something. Now there has to be a judgement as to whether one is a 'good' actuary or a 'bad' actuary.

There were many lawyers on Masterchef. Is your cooking good enough for Masterchef?

Yes 11% | **No** 89%

The figures say it all – Actuaries are not Masterchefs! Comments received from the *Pulse* survey are usually quite creative and entertaining. Unfortunately, when asked for the potential trial dishes, the responses seemed to lack imagination and worthiness for publishing. ▲

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Professionalism Course

A group of actuaries-in-waiting, sipping tea or downing their morning caffeine fix greet familiar faces in the lobby of North Sydney's Vibe Hotel. For many, the October 2010 Professionalism Course was the last formal hurdle before gaining the elusive title, 'Actuary'. The content over the two days was extensive and left us with the actuarial equivalent of Batman's utility belt and a lot to ponder. Although the messages we learnt are still sinking in, hopefully everyone, like me, was left excited and inspired by what opportunities and prospects the future holds now that we've gained the big 'A'. The general populace beware: 'Actuarial' dominance is looming!

Our Monday morning began with an introduction from the course facilitator, Martin Mulcare. From the get go, Martin's enthusiasm and passion for the course was clear and I'm positive he had remembered all 49 attendees' names before we had taken our seats. Our cue for the official commencement of the morning was the playing of clichéd, inspirational 80's rock music; a consistently amusing theme for me over the two days.

As the music faded, Barry Rafe kicked off session one about ethical thinking. He confronted us with an interesting hypothetical and somewhat realistic situation where we, as actuaries, were faced with a moral dilemma. The aim of this was to see where we draw the line. How far would we go and why? The poll results of the room showed very varied responses and views, all with reasonable justification. This set the precedence for the following discussions and sessions: when faced with a moral or ethical dilemma, there is no right or wrong answer.

So how do we best prepare ourselves to manage the ethical dilemmas we may face in our careers as actuaries? Enter Anne Peters and David Goodsall for our afternoon sessions. Here we are taken through our professional obligations, the Institute's, Disciplinary Scheme, Continual Professional Development, and the Institute's Code of Conduct. These sessions put in perspective our professional roles and responsibilities to not only our customers, but also the public and the implications of our actions.

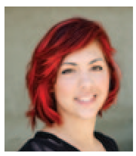
We are starting to learn that all the legislation, requirements, standards and codes are there to aid us in our professional endeavours. They are there to ensure we behave with integrity; to provide us with a framework to implement in everyday activities, but also to consider when we come across dubious or uncertain situations. As we continue in our careers, answers will not always be clear but we are now equipped to deal with the grey in between.

Day one was rounded out with an address from our President Bozenna Hinton. After some drinks and 'freshening-up' time, we journeyed to Luna Park for dinner and an entertaining improvisation act. Sponsored by QED Actuarial, the evening was full of banter, laughter, eating and drinking. A small few kicked on to the Kirribilli Hotel but were all in bed with plenty of time to rest before the start of day two.

The emphasis of day two was about how actuaries are represented and how we best portray our own message and personal brand. Estelle Pearson gave us a compelling account of her role as the actuarial expert to the HIH Royal Commission. It certainly left me assessing what I'd do in that situation and mentally implementing the framework learnt on day one. Tony Bulmer, a specialist in presenting skills led the last session of the course. He equipped us with skills that will undoubtedly help us in the future where we are essentially building up our personal branding.

On a similar note, the branding of the profession was a key point highlighted by the Institute's CEO, Melinda Howes. Globalisation has certainly impacted on the need for actuarial skills around the world. The range of work in financial services means that these unique skills are sought after in more areas than the traditional insurance and superannuation roles. The significant proportion of actuaries involved in areas such as risk management, banking and project finance, was reinforced by the number of non-traditional actuaries in the room.

Now, like the majority of attendees, I participated in the course to gain the new designation of Actuary. Many were not on paths to fellowship but were still 'representin', so to speak. These capable professionals are now able to show the world that actuaries are the bright, highly skilled new participants in the financial services marketplace. World domination is now not such a far-fetched idea and hopefully I will see the day when I meet new people and proudly tell them I'm an actuary, I don't get a blank stare and the general comment: "Oh, what's an actuary?" <insert explanation> "So, kind of like an accountant?" ▲



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Institute of Actuaries of Australia

Congratulations to our New Fellow and Actuaries

October 2010

FELLOWS

Arlene Bridget Forker

Richard Saverimuttu

ACTUARIES

Soemya Agarwal
Taposh Abrar Ahmed
Jason Bryant
Gavin Ludwig Buckley
Lynn Bui
Chris Butel
Su Lan Cagnes
Gekko Hiu Ying Chan
Yulia Chandra
Vivian Wai Sum Cheung
Lim Pei Chin
Melissa Chong
Oui Yau Chuah
Patricia Donohue
Ross Eaton
Leonid Elikhis
Shari Emin
Amàlia M Ferrés
Stephen John Gold
Lim Hui Zhen Grace
Alick Guoqiao He
Stuart Douglas Hoy
Laura Hunt
Uma Joshi
Iwan Nugroho Juwono
William Lee
Sammy Liu
Clarence Chun-Kit Ma
Alison Nanson
Jacky She Kiu Ng
Karl A Niemann
Anagha Pasche
Julian Christopher Polic
Manabu Sato
Vicki See
Geetha Singam
Trully Catharina Smith
Valerie (Bei) Sun
Jonathan Bing-Kai To
Anthony Tockar
Matthew Robert Turner
James David Vernon-Payne
Kenny Albert William
Tai Hui Yen
Yuriy Zbrutskyy
Lin Zheng
Bianka Melanie Zubac

Step Up Program

Inaugural Alumni Event

"Think long term; invest long term." Sounds like a typical quote from an investment seminar? Perhaps. However, there is more to this than meets the eye. This profound statement cannot be underestimated. It does not relate simply to the investment markets, with which we are so familiar. Instead, it affects all spheres of our everyday lives.

This statement was one of the opening messages we received as a group of Step Up Program Alumni gathered together on a sunny, winter lunch time for the Inaugural Step Up Program Alumni Event, hosted by the Institute of Actuaries of Australia.

Dr Ian Pollard was our guest for the day and he challenged us to think long term in both our professional lives and our personal lives. Similar to financial investments, we invest long term in our lives and yield long term returns. Dr Pollard shared a model of investing in our lives, underpinned by three key elements that interact with each other:

- Human capital;
- Social capital; and
- Financial capital.

When these three elements are built in a balanced fashion, they strengthen each other.

Particular focus was placed on social capital, which entails opportunities to engage others and leverage off their capital, ideas, knowledge, contacts and even their networks. Relationships often start small but build up progressively. A virtuous circle can form over time and enormous rewards can be reaped in the long run. It was highlighted to us that relationships morph and mature, dynamics shift and people engage in different ways with each other over time. However, the value of networks is crucial. Likewise, the value of relationships with peers should not be understated.

2009 Bootcamp cohort

This model served as a key platform for us as we launched the Alumni network. A few key aims of the network are as follow:

- Leveraging the Alumni group for:
  - Creation of opportunities;
    - Networking;
    - Support and advice; and
    - Collaboration;
  - Continued leadership development; and
- Expansion of industry awareness and knowledge.

This event was the first time that the two cohorts of the Step Up Program (2009 and 2010) met as a group and it will certainly not be the last. On the day, we brainstormed various options for future Alumni events, some of which included guest speaker presentations, from traditional actuarial fields as well as non-traditional fields; personal development through working on group projects together; soft skills development; group mentoring; enhanced understanding of growth areas in the profession; assisting with the future development of the Step Up Program, which we have been privileged to be part of and benefit from; and of course, last but not least, networking (possibly over some snacks/drinks!).

It came as no surprise that there was a lot of support for bringing in guest speakers to share their career and life journeys. We have already started compiling a list of different speakers. We realised that there are so many notable leaders from whom we would be keen to learn.

We agreed to meet on a quarterly basis, with the Melbourne contingent dialing in. As the network grows over time, we may be able to have separate Melbourne and Sydney events. We also toyed with the idea of setting up online forums to facilitate interaction of Alumni groups.

On the topic of networking, we found it refreshing to meet the other cohort and also renew existing friendships. It was a great opportunity to get to know each other better and listen to each other's stories and experiences, which range from having a previous life in the military to meeting Rhodes Scholars! In light of the value of this aspect, we decided to incorporate a sharing and reflection session in each of the future events. This should enable

2010 Bootcamp cohort

the free-flowing of ideas and allow us to learn from each other as peers and stimulate our thinking.

Some of the key insights we gained from the Program stem from a myriad of projects in which we were involved. For instance, I had the privilege to pursue my interest in enterprise risk management (ERM) and develop a project in this space. I worked with the Risk Management Practice Committee, as well as other practice committees, in developing strategic and operational plans for ERM within the actuarial profession in Australia. ERM is a rapidly evolving field and certainly provides many opportunities for actuaries to contribute. It was an eye-opening experience to canvass the spectrum of views of actuaries on this important field and to see the passion of many like-minded actuaries on ERM, albeit from different practice areas.

Suffice to say, there was a buzz that filled the room where the Inaugural Alumni Event was held. The enthusiasm of the Alumni group could not be missed. Dr Pollard's talk provided an inspiring and stimulating beginning to our Step Up Program Alumni network. As we plan ahead for future activities, "think long term; invest long term" will certainly feature strongly in our minds.

If you are interested in accelerating your leadership development, getting involved and making a difference, I highly recommend you apply to participate in the next Step Up Program. It is, without doubt, a positive and invaluable experience.

Enquiries for the 2011 Step Up Program should be directed to katrina.mcfadyen@actuaries.asn.au ▲

Gloria Yu
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Mike McLaughlin (left) presents the Society of Actuaries (SOA) Presidential Award to Fred Rowley

Congratulations to **Fred Rowley** MA, FIA, FFA (Hon), FIAA, Past President of the Institute of Actuaries of Australia and 2010 Actuary of the Year, for being awarded the SOA Presidential Award by outgoing President Mike McLaughlin.

Each outgoing President of the SOA has the right to make awards to those individuals s/he considers to have contributed in a significant way to the actuarial profession anywhere in the world.

At the SOA 2010 Annual Meeting, President Mike McLaughlin stated "SOA Presidential Awards are personal, not organisational, and are given to individuals who have made significant contributions to the SOA's goals and programs or have helped advance the actuarial profession."

As the Institute's President in 2007, Fred steered the global implementation of the CERA credential in ERM, working with the presidents of the SOA and 13 other actuarial associations from around the world. He is now chairman of the CERA Treaty Board and the CERA Global Association.

"Fred has been very instrumental to the Global CERA designation and I'd like to honour him for all the work he has done," commented McLaughlin.

Seven other individuals were also presented with the award:

Sheree L. Baker, Director of Governance, SOA
Robert L. Brown, FSA, FCIA, ACAS, HonFIA
Gregory W. Heidrich, Executive Director, SOA
David N. Ingram, FSA, CERA, MAAA
Max J. Rudolph, FSA, CERA, MAAA
Francis P. (Frank) Sabatini, FSA, CERA, MAAA
Robert W. Stein, FSA, MAAA

The SOA Presidential Award was the vision of SOA Past President Sam Gutterman, who wanted an award that honoured outstanding individuals during a particular president's term. In 1996, as president, his vision became a reality. Since then, the award has been presented to 71 individuals for their hard work, effort and contributions to the SOA. ▲

"...develop your actual career overseas."

SENIOR CONSULTANT — **INVESTMENT**

LONDON — £ very competitive + excellent benefits

Seasoned investment consultant sought to take up senior role within a growing consultancy. You will provide insight, expertise and leadership in delivering a full range of strategic advice to clients, with whom you will work closely. This represents an excellent opportunity for a candidate seeking a new challenge to lead from the front and fully develop your career.

Ref: Star179

SOLVENCY II ACTUARY — **LIFE / NON-LIFE**

LONDON — up to £100k + bonus + benefits

Worldwide financial group seeks qualified actuary to lead the Solvency II internal model development function. You will lead the Internal Model Application Process, managing the relationship with FSA and play a key role in the Own Risk Solvency Assessment. You will have strong technical and analytical skills and proven communication, presentation and negotiation skills.

Ref: Star177

SOLVENCY II ACTUARY — **LIFE COMPANY**

BRISTOL — £ highly competitive package

Leading insurance group seeks qualified actuary with proven technical ability to join its Solvency II transformation team. You will provide actuarial input into the design and delivery of the internal model and financial reporting processes for Solvency II. You will lead the parallel reporting of Solvency II results prior to implementation, including generation of results required for the internal model application.

Ref: Star176

CAPITAL ACTUARY — **LIFE COMPANY**

LONDON — up to £80k + bonus + benefits

Leading insurance group seeks a qualified actuary with very strong technical ability to monitor its capital position and report this to senior management. The successful candidate will have excellent communication, influencing and organisational skills and will therefore be able to manage key relationships across business areas. This is a great opportunity to develop your management skills within a dynamic organisation.

Ref: Star175

Introducing Star Actuarial's Referral Bonus Scheme:

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BONUSES OF UP TO £2,500 PER CANDIDATE

Do you know any star candidates that are looking for a new opportunity? We would be delighted to help them with their search. Refer a friend or associate to Star Actuarial and we will pay you a referral bonus of up to £2,500 if we place them in a new role!

Full details of the scheme can be found on our website at www.staractuarial.com/referralbonus.php

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STAR **ACTUARIAL** FUTURES

PRICING ACTUARY — **LIFE COMPANY**

BRISTOL — up to £85k + bonus + benefits

Insurance group seeks life actuary to join its expanding product pricing team to design and develop new products. You will ensure that the profitability, capital efficiency and risk profiles of the products are in line with strategic objectives. Join this market leader to use your strong analytical, communication and change management skills.

Ref: Star174

LONDON MARKET PRICING ACTUARY — **NON-LIFE**

LONDON — up to £90k + bonus + benefits

London market client seeks a pricing actuary to provide actuarial support to the underwriting teams. Successful candidates will advise on the pricing of individual risks, rating trends, measurement and management of exposure and the development of the business plan and underwriting strategy. This is an excellent opportunity for a strong team player to advance your career within an exciting and dynamic company.

Ref: Star167

HEAD OF PRICING AND UNDERWRITING — **NON-LIFE**

LONDON — £ to attract the best

An exciting opportunity has arisen to join a major insurance group as head of pricing and underwriting for the household class of business. As part of this varied and dynamic role, you will monitor business performance, including overall performance and reserving related issues, and take corrective action where necessary. You will also work with the Board to set strategic objectives. This is a fantastic chance to advance your career within a major, thriving company.

Ref: Star166

DIRECTOR OF FINANCIAL REPORTING — **LIFE COMPANY**

DUBLIN — £ very attractive

Our client is seeking a qualified actuary with strong analytical and communication skills to lead its financial reporting department. You will lead the actuarial teams in delivering detailed quarterly reporting and play a pivotal role in producing budget numbers. This is a fantastic opportunity to be at the forefront of a major international financial organisation.

Ref: Star156

MOVE TO LIFE — **LIFE CONSULTANCY**

LONDON AND EDINBURGH — £ excellent

Leading professional services firm seeks talented, commercial (nearly) qualified actuaries to join its rapidly expanding life practice. You will identify potential business opportunities, create innovative insights for clients and contribute to thought leadership. Recent projects include longevity risk transfer to the capital markets and equity release modelling for a leading investment bank. Candidates from a pensions background will be considered.

Ref: Star152

SHAPE THE FUTURE — **LIFE AND NON-LIFE**

LONDON — up to £150k + bonus + benefits

Our client is seeking qualified actuaries with capital modelling experience. You will be a self starter with drive and commercial acumen. You will be an enthusiastic team player and will have the maturity, integrity and stature to challenge, negotiate and influence at the highest level. You will have an unparalleled view of Solvency II development. Join this high profile and highly regarded team.

Ref: Star136

MOVE TO RISK — **LIFE, PENSIONS AND INVESTMENT**

EDINBURGH — £ very attractive

Leading banking group requires qualified actuaries to review and control the risks faced by its life, pensions and investment business. You will play a key role in the development of Solvency II requirements, including the Own Risk Solvency Assessment (ORSA). You will have strong communication, technical and project management skills. Take this opportunity to shape the future of risk management within a major organisation.

Ref: Star64

SUPERSTARS — **MANAGEMENT CONSULTANCY**

LONDON — £ excellent

Global management consultancy seeks highly motivated (nearly) qualified actuaries from all disciplines. You will have outstanding academic credentials and a strong record of extra curricular activity, professional accomplishment and leadership. You will benefit from greater and faster exposure to tougher challenges. Join a firm that develops, excites and retains exceptional people.

Ref: Star1

www.staractuarial.com

Protection Strategies:

Analysis of Their Impacts on Market Stability

Continued market volatility has resulted in ongoing discussion and investigation of insulating investor portfolios from market risk. The practice of manipulating portfolio risk was revolutionised in the 1970's following the pioneering work of Black and Scholes with respect to option pricing theory and the subsequent implementation of their theories in the form of portfolio insurance by Leland and Rubenstein.

While theoretically elegant and initially hugely successful, portfolio insurance was in practice viewed as something of a failure, with it being seen as responsible for the 1987 market crash. Despite this, portfolio insurance never went away and it has in fact continued to grow in popularity (under a variety of guises) since 1987.

In recent times, as markets have gone through periods of increased volatility, most notably during the Global Financial Crisis (GFC) in 2008, debate has resurfaced about the value of portfolio insurance and with it, the potential impact on the stability of the financial system, commonly referred to as "Systemic Risk". This article reviews some of the common arguments for and against these strategies.

Introduction to protection strategies

Investors and investment managers have implemented numerous strategies to protect their portfolios from market risk in the past three decades, including portfolio insurance, protected margin loans, option budgets, and variable annuities. At their core, each of these strategies can be deconstructed into one of two broad protection techniques – option based portfolio insurance (OBPI) and constant proportion portfolio insurance (CPPI).

OBPI, based on Black-Scholes option pricing theory accomplishes protection through either the purchase or dynamic replication of an option. Put-call parity means OBPI can be implemented using either put or call options depending on the structure of the protection and with consideration given to any market anomalies, such as the presence of franking credits that may favour one approach over another.

The development of CPPI was borne out of the search for a time-invariant protection strategy that could address the early constraints of OBPI approaches. In particular, early OBPI approaches required a fixed term for the investment.

As an alternative, CPPI relied on dynamically rebalancing the asset allocation of the portfolio between growth assets (the underlying) and a 'risk free' portfolio according to the following formula:

Growth Assets = Multiplier × (Total Assets – Protection Floor).

This approach results in a diminishing allocation to the underlying (and an increased allocation to the risk free asset) as the overall account value falls. In theory, under this strategy, the asset value can never fall below the floor – which is set to ensure that funds invested in the risk free asset will accumulate back to the protected amount over a certain time horizon. In reality, discrete time market movements and rebalancing thresholds do make it possible for the account value to fall below the floor. To combat this potential risk, CPPI providers can offer an additional guarantee over and above the mandated strategy.

Analysis

The core argument for protection strategies causing systemic risk is that these are buy-high / sell-low strategies. Falling markets lead to increased selling, accelerating the fall in the market and resulting in a negative 'feedback loop' that serves to put further downward pressure on market prices.

To analyse this assertion we must begin by understanding the drivers of any trading activities for the dynamic strategies outlined within this article. Static OTC option-based protection does not involve rebalancing as markets move, although there will arguably be some dynamic replication by the OTC option provider. Regardless, our analysis focuses on the dynamic protection strategies as these will potentially have the most severe systemic impacts.

Under dynamic protection strategies, a sell trade occurs when markets fall in response to the increased likelihood that the account value will be lower than the protection target at the end of the protection term.

The extent to which this rebalancing occurs will depend on the sensitivity of the protection strategy to the downward market movement – often referred to as delta (Δ). It is important to note that delta is not static and changes as markets move (referred to as gamma Γ). Comparing these metrics under different strategies helps to provide insight into the dynamic nature of trading that occurs under various scenarios.

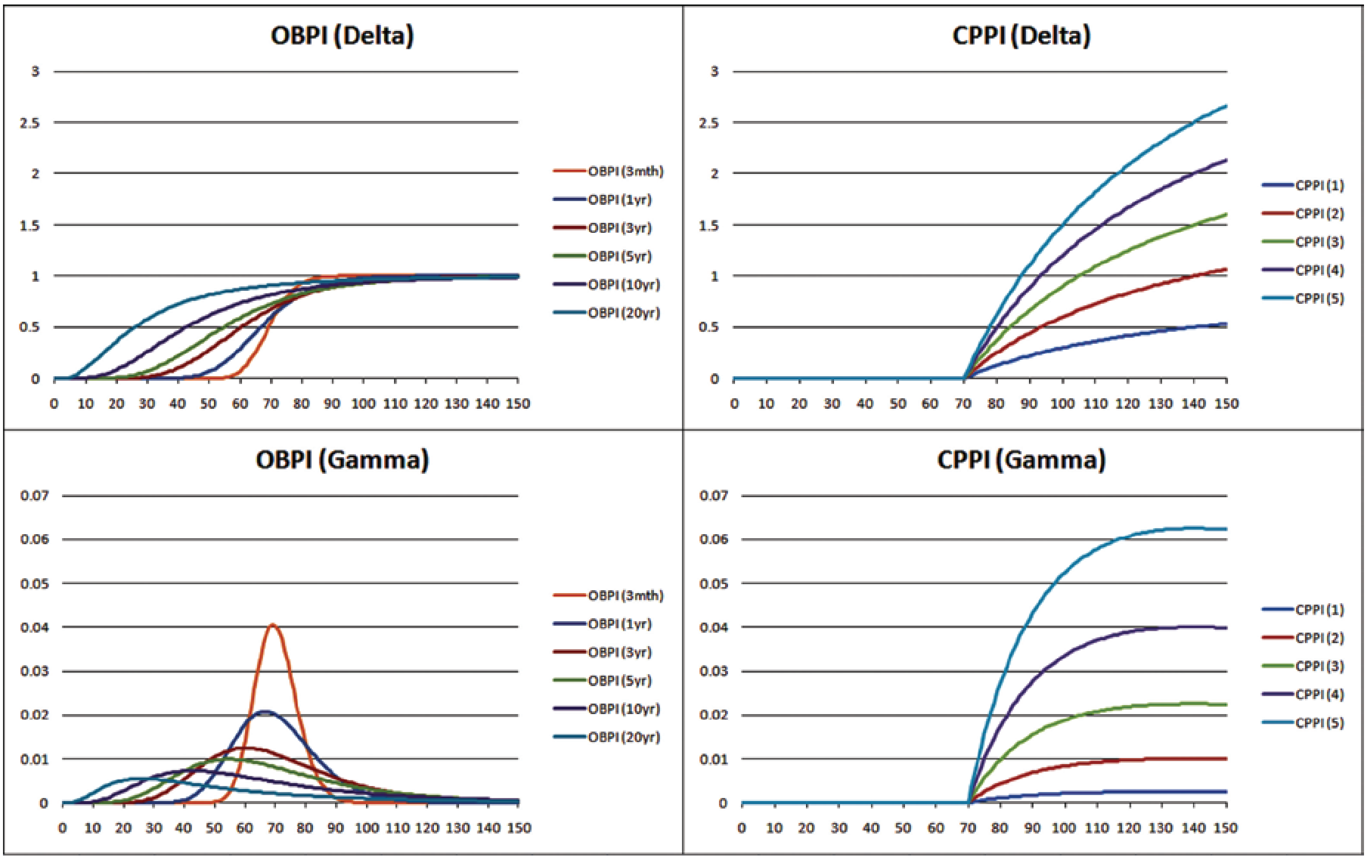
For the purpose of this article, we have compared a number of OBPI and CPPI strategies utilising different underlying parameters. For OBPI, the key parameters are the term to maturity and the protection level (or strike price). For CPPI, the key parameters are the multiplier and the protection floor (as described in the previous formula). The floor for CPPI is analogous to the protection level under OBPI so we have considered a common fixed protection level / floor of 70% of the initial investment. Various OBPI tenors ranging from 3 months to 20 years, and CPPI multipliers ranging from 1 to 5 have been assessed.

Figure 1 shows the Δ and Γ profiles of the two strategies for each of these variations. The horizontal axis illustrates the account values from the perspective of the protection provider assuming initial account values of 100.

Analysing these charts provides some useful insight with respect to the various strategies:

- OBPI consists of a long exposure in the underlying assets together with a put. As such the Δ of an OBPI strategy always lies between 0 and 1. Consequently, leverage is not a fundamental feature of the strategy.

Figure 1: OBPI Delta Profile



- By contrast the Δ and hence the leverage of a CPPI strategy increases significantly beyond the floor value as equity markets increase. This is a function of the multiplier which effectively drives the extent to which leverage is a feature of the strategy.
- Longer term OBPI strategies will result in lower levels of forced trading (Γ), or rebalancing in most cases as the expected risk free return insulates the strategy against short term market fluctuations. As the OBPI strategy approaches maturity selling pressure will increase for accounts that are at-the-money (i.e. the current account value is close to the protection target).

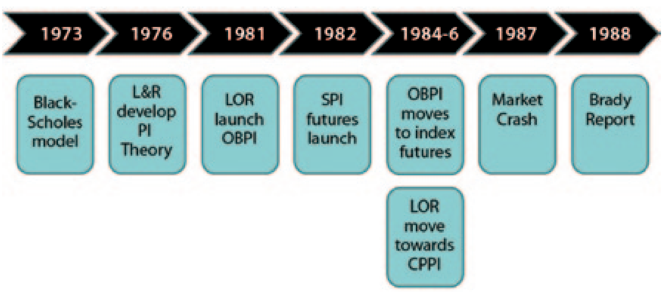
To put these charts into some perspective, we have also assessed the impact of an extreme market movement on both a 20 year OBPI strategy as well as a CPPI strategy with a multiplier of 5 (CPPI[5]). In this example, the market falls instantaneously by 10% with $10 billion invested in each strategy.

Under the CPPI[5] strategy, the investment manager will be forced to sell around 50% the equity exposure (since $\Gamma \approx 5\%$), which equates to $7.5 billion. On the other hand, under the 20 year OBPI strategy, the rebalancing is approximately $7 million – less than 0.1% of the impact of the CPPI strategy. This is an extreme example, but it illustrates the importance of leverage when analysing systemic risk.

Lessons from history

Any study of market impacts of protection strategies would be incomplete without considerations of the most famous market crash (at least until the GFC) which took place on the 19th October 1987 – commonly referred to as "Black Monday". It is best remembered for the 20% intra-day market decline and the dislocation that occurred between equity and futures markets. Before analysing these events, it is important to add some historical context for any readers who may not be familiar with the detail behind this dramatic event. Figure 2 is a simplified timeline of some of the key events relevant to 'Black Monday'.

Figure 2: Events Leading Up To 1987 Crash



Some important points to note about the historical context include:

- Option pricing theory and the concepts of replicating portfolios were revolutionary at the time
- The index futures market was in its infancy.
- Computers were rare and lacked anything approaching the processing power we see today.
- At the time of the crash Leland, O'Brien and Rubinstein (LOR) had migrated most of their portfolio insurance accounts to CPPI based strategies.

Almost universally the blame for both the crash and near market failure was placed squarely on the shoulders of portfolio insurance. The Brady report, which was delivered to the US government in January 1988, is damning of the role played by portfolio insurers in the 1987 crash. Some of the key findings included:

- Portfolio insurance accounted for approximately 15% – 30% of the futures volume traded intra-day, peaking at 80% at times – that is, protection strategies contributed significantly to the selling.
- There was a massive dislocation between the spot and the futures markets caused by excess selling pressure in the futures market and an inability of arbitrageurs to fill the void.

The report goes on to also note:

- The crash came on the back of string of negative economic data (essentially fundamentals initiated the crash).
- None of the intervention actions, taken by the regulatory authorities including a number of trading halts, were successful in stemming the fall. The fall in the market was eventually stopped by the market itself as listed companies recognised the deep discount of their own stock versus fundamentals and initiated share buy-backs restoring market confidence.

Whilst noting that the commonly held belief is that portfolio insurance was a primary driver of the severity of market crash it is worth noting that this view was not unanimous. A number of alternative opinions exist. In particular, Leland and Rubinstein (L&R) argued the following points:

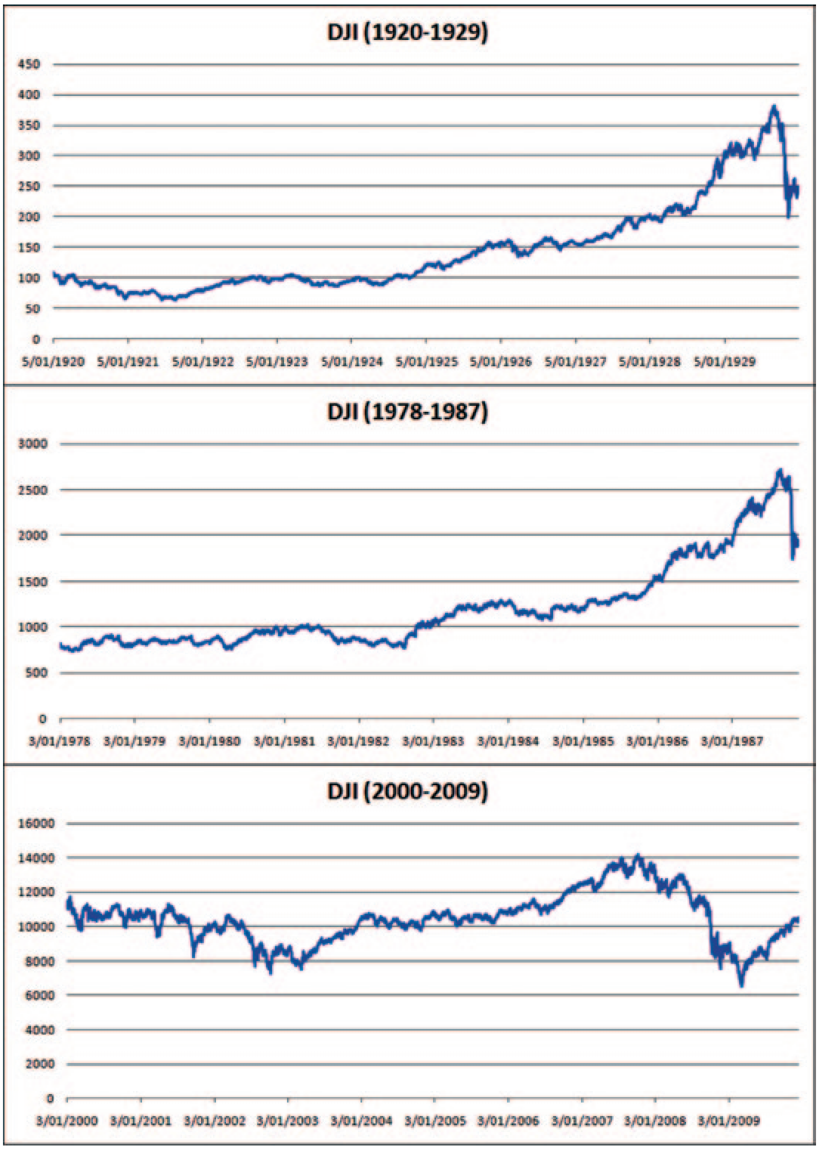
- Markets worldwide experienced falls of a similar magnitude, while portfolio insurance was only implemented in the US.
- If the market knew the selling was primarily due to portfolio insurance, (rational) investors would buy the undervalued stocks – which they eventually did to restore balance.
- While portfolio insurance volumes spiked over the period, L&R highlighted that portfolio insurance volumes were spiking at times when prices were rising, which contradicts the argument that trading due to portfolio insurance was pushing down prices.
- Finally L&R raised the question of what L&R's investors would have done during the crash if they were not invested in portfolio insurance strategies?

While we will never know the answer to L&R's question, this question does lead to a critical point in the debate. The natural response of most investors in a falling market is to sell. This response was not invented by portfolio insurers, it was just structured. So L&R may be correct that these investors would be selling anyway, but would they have been selling as much? Also, even if they were selling as much, does the algorithmic nature of the selling under portfolio insurance lend itself more readily to exploitation by other market participants, thereby increasing the risks to the financial system?

To analyse these questions we can look further to the past for insight. The crash of 1929 is quite similar to the one in 1987 given that, in both cases an asset bubble occurred in equity markets, which was ultimately popped. In both cases, poor economic fundamentals triggered the market correction. In the case of 1929 the correction was followed by the great depression, while in 1987 the correction was followed by a long and deep recession. By comparing these events we would expect the existence of a relatively steep correction as well as an "over-correction" in 1987 (relative to 1929) as clear evidence of the impacts of portfolio insurance in that crash.

The actual paths followed by the Dow Jones Index (DJI) in the 10 years leading to the 1929 and 1987 crashes, are depicted in Figure 3. In each case, the market fell by a substantial amount. Given the presence of portfolio insurance in the 1987 crash, it might be expected that any correction would be more severe compared to 1929 due to the forced selling and feedback loop. Interestingly, when comparing the 1929 crash to 1987, we see a larger fall in 1929, which given the economic fundamentals at the time is reasonable and no obvious evidence of an additional impact in 1987 due to portfolio insurance.

Figure 3: Dow Jones Index



As a further contrast, consider the recent global financial crises (GFC). The market dropped further during the GFC compared to 1987, but this occurred over a longer period. Unlike 1987, very large single intra-day drops (or gaps) were not observed and the market had little difficulty absorb the impacts of any forced selling, despite the reduced liquidity and increased prevalence of portfolio protection strategies. The obvious question to ask would be why did the various protection strategies (in much greater volumes than in 1987) not crash the global market this time? The market was certainly falling by a sufficient amount to trigger forced selling. The most plausible answer is that the liquidity and sophistication of the futures market has grown enormously since 1987 and this mature market is perfectly well equipped to deal with the volumes being traded.

What can we learn?

Perhaps the first critical lesson here is that not all investment strategies are created equally and it is important to consider each strategy on its merits when considering potential systemic risks. The suggestion that all protection strategies increase systemic risk does little to inform the debate, just as we add little by noting that all sellers in a falling market increase systemic risk.

We know that investors sell in a falling market due to fear and uncertainty. We also know that this behaviour is responsible for at least two of the three largest market corrections in the past 100 years. Selling in a falling market is a natural response and while behavioural biases will impact short term market volatility, ultimately it is fundamentals that drive the market.

Alternately, observing that leveraged investing increases systemic risk by multiplying exposures and trading activity, we find a conclusion that can be explored. Leverage is a crucial factor and while option exposures are by definition leveraged, it is important to remember that a protected portfolio consisting of an equity or debt exposure combined with an option position is not a leveraged strategy. ▲

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Andrew Fisher

Monkey Business (AA153 – Solution)

Suppose one million monkeys each sat at a typewriter and hit keys at random at a rate of one key per second. What is the expected amount of time it would take the monkeys to type the following (including spaces)?

`to be or not to be`

You may assume that the monkeys never stop typing and that they have infinite life spans.

Solution: The keyboard on my computer is 280 cm^2 in area, with each alphabet key taking up 3.2cm^2 of space and the space bar occupying 19cm^2. Thus, I assume the probability of a single monkey hitting a specific letter key is 0.0114 and the probability of that monkey hitting the space bar is 0.0679. Assuming independence between key strokes, the probability that an 18 stroke key sequence will read "to be or not to be" is $(0.0114)^{13} \times (0.0679)^5 = p$. Therefore, the expected number of key sequences it will take for a monkey to type "to be or not to be" is $1/p = 1.2615 \times 10^{31}$ (based on the properties of the geometric distribution). As one million key sequences are commenced each second, it is expected that it will take approximately 1.2615×10^{25} seconds for a monkey to type "to be or not to be". This equates to 3.99746×10^{17} years of typing (that is, 399.746 million, billion years)!

Only three correct answers were submitted this time. The winner of this month's *In the Margin* prize, selected randomly from among the correct entries, was **Corey Plover**, who will receive a $50 book voucher.

Zeno, Warrior Philosopher

Probably the most famous mathematical paradoxes of all time are those of the 5th century BC Greek philosopher Zeno of Elea. Zeno is believed to have devised around 40 paradoxes of which only nine have survived. The best known of these are the four paradoxes of motion, through which Zeno argues the impossibility of movement. Although, logically, Zeno's paradoxes must be wrong (unless you happen to subscribe to the belief that life is merely an illusion, as Zeno's teacher Parmenides hypothesised), Zeno's contemporaries could not determine why they were wrong. It was not until the 19th century AD that Zeno's paradoxes were mathematically resolved (although they still present a problem for some philosophers).

There is not enough room in this column to discuss all of Zeno's paradoxes of motion, so instead we shall focus on just one of them, the paradox of Achilles and the tortoise:

Achilles and the tortoise agree to run a race. Because Achilles can run at ten times the speed of the tortoise, Achilles gives the tortoise a 100m head start. Once the race begins, in order to overtake the tortoise, Achilles must first run 100m to reach the tortoise's starting point (point A). However, in the time it takes Achilles to reach point A, the tortoise has moved 10m forward (to point B). Achilles must then run a further 10m to reach point B, but in the time it takes Achilles to reach point B, the tortoise has moved forwards another 1m. In short, every time Achilles arrives at a point where the tortoise has been, the tortoise has already moved ahead. Therefore, Achilles can never overtake the tortoise.

The fallacy in Zeno's argument lies in his implicit assumption that the sum of an infinite number of terms is necessarily infinite. In order for Zeno's conclusion to be true, the tortoise must be able to maintain his lead over Achilles for the full distance of the race. Consider the infinite series of distances between Achilles and the tortoise after each leg of the race: 100, 10, 1, 1/10, 1/100, ... The sum of this series is 111.11m, not infinity. Thus, the tortoise can only maintain his lead during the first 111.11m of the race, not over the entire race, as was concluded by Zeno. Therefore, it is theoretically possible to overtake a slow moving person who is in front of you (although people who have tried to do this in the Sydney or Melbourne CBD may still have grounds to argue otherwise).

The Great Race

Achilles, the hare and the tortoise participated in a race with each other. The tortoise had an accident at the start of the race and began running last, while the hare was second to begin running. During the race, Achilles exchanged positions with other contestants five times. It is known that the hare finished ahead of Achilles. In what order did they finish?

For your chance to win a $50 book voucher, email your solution to this problem (including working) to: inthemargin@actuaries.asn.au ▲

Reliable Advice?

My friends and family often ask me questions of a financial nature, from "Should I choose this defined benefit super fund over that defined contribution fund?" to "What was the US GDP last year?". How do I respond to questions outside of my area of specialisation without coming across as unhelpful or ignorant?

Oh yes, it is a heavy burden when friends ask for financial advice. You can't say no, because you know you're better informed than they are and you can add some value. But you dread giving the wrong advice, and you're not sure if you can handle the responsibility – and the potential future guilt if things go wrong for them. Topping it off is anxiety that if anyone finds out you've been giving advice you could be struck off the actuarial register for breaching an important professional standard.

Here's my approach. Warn them that you're not a financial adviser, and can only be seen as an 'informed layperson'. Don't TELL them what to do, but explain the advantages and disadvantages of each option and lead them through the process of making their decision. Afterwards, hope for the best!

Miscellaneous queries can be handled with less caution. US GDP? Make a plausible guess, which will at least hold water until you are corrected by someone who googles it on their phone.

Some jobs are more arduous. Asked to work out the dinner bill in the restaurant? Peruse bill, add allowance for modest tip, reach for calculator, divide by number of people – including the couple who left early and forgot to leave money. Ask everyone for $55.20, adjudicate arguments about who didn't have an entrée or drank more wine than everyone else, collect money, ask waiter for change, collect rest of money. Hand over huge pile of notes and coins, sink back exhausted into seat just as the person who's spent that whole time outside on their mobile phone re-enters and asks how much they owe. Another pleasant evening ruined!

Crying Over Skim Milk

The office fridge is always stocked full with skim milk. Is this part of a new low-fat trend restricting my access to real food/drink? Would we all be more effective and attractive if we drink skim milk?

Have you heard the advice that you should only eat foods that your grandmother would recognise? (For some of you, that would be great-grandmother.) It's about avoiding overly processed foods.

Well, even the 'real' milk we have these days would hardly be familiar to Nana. Where's the yellow creamy layer? Where's the taste and texture? She wouldn't be happy. And then with your modern milks, things head south from there. First you've got 'lite white', with a bit more of the real milk experience removed. And… at the very bottom of the heap there's skim milk, with all the taste and texture of the water that's left in the jar after you've rinsed the white paint out of the paintbrush.

And what do we achieve by this self-deprivation? My research indicates: if you're replacing one cup of full cream milk with skim each day you'll (theoretically) be down 2.4 kg of weight in a year. If you're using 100ml per day (say, two cups of tea with 50 ml of milk each) it's only 0.9 kg. But before you say "It's worth it!", these calculations ignore the fact that you will have to use twice as much skim milk - otherwise you can't drink the tea because it's too hot and tastes terrible. And wouldn't it be better to get your kilojoule savings by (for example) eating just a mouthful less of meat each time you have it, rather than ruining your cuppa? I think so.

Another issue – all of this futile calorie reduction is achieved at significant cost to our environment. Imagine the amount of energy that's required to power the taste-removal machines producing scientific milks all over the country! Not only do we have millions of dairy cows farting out greenhouse gases, we've also got the power stations churning out CO_2 to process the cow's product.

Finally, let's face it, we're not getting any slimmer or more attractive as a society, even as we take up these low-fat milks and buy our low-fat foods. Your office is just another wacky microcosm of The Crazy Mixed-Up World We're In. ▲

Remember to send me your questions! – the more controversial, the better.

I was recently working with a client who was expressing his discomfort with his recent conversations with his clients. My client is a friendly, relaxed person and so I was surprised that he was feeling anxious about his client engagements. When we role played a recent client meeting, I noticed that he had adopted a different posture to his normal seating position. We soon concluded that he needed to return to his normal, friendly posture if he was to feel his normal, friendly self. Not everybody accepts this link between physiology and emotional state, so I thought I might explore the potential impact that your physical position may have on the quality of your communication.

I understand that there may be some scepticism about this topic and there is some difficulty in testing it because it relies on your self-awareness of your emotional state. Hence, as a starting point, you will need to be conscious of your feelings when you are communicating – something that does not come easy for everyone. Let's consider an example.

Suppose that you are called upon to address the Board of Directors of your organisation. In this example, let's assume that you would like to feel confident and self-assured when you present to them. Let's also imagine that last time, on reflection, you felt nervous and uneasy when you answered their questions. Now, for this purpose, forget about the actual questions and answers, and think back to your physiology at the Board Meeting. Let's say that you recall that you were sitting at the Board table when you were answering their questions. You remember feeling uneasy that questions seemed to come from all directions and that you felt that you lacked authority in your responses. Now think about occasions when you have felt confident when speaking (and again, forget about the subject matter). If you were standing up at those times then I suggest that you adopt your preferred, confident physical state (ie standing) when you next address the Board. You may need to seek permission or explain why you would prefer to stand if you are expected to sit. But isn't it better to try something different if you want a different result?

Now, I am not saying that it is better to stand than sit. I could have presented a different scenario… Imagine that last time you felt uneasy standing up in front of the Board. You felt exposed, you were nervous about your hands and some of your notes were left on the table. Perhaps you usually feel more confident when seated at a meeting, on the same level (physically) as the other people and with all of your notes ordered carefully around you. In that case it would make a lot of sense to remain seated at your next Board presentation if you really want to feel confident and self-assured. Again, you may need to seek permission, but I'm sure that you can happily explain why.

Physiology is not just about sitting or standing and it is often more subtle. It's not about making judgements regarding body language but recognising that different physiology works for different people. So, my key messages today are:

- There is a link, often strong (albeit subconscious), between physical state and emotional state.
- Become more conscious of how you are feeling when you are communicating, and if you don't like how you are feeling, reflect on your physiology.
- If you want to change how you are feeling, you might begin my changing your physical state.
- There is no right physiology or wrong physiology – it's what works for you.

The corollary is particularly interesting. If we don't like the emotional state of someone we are communicating with, we could attempt to change how they feel by changing their physiology.

It takes more than maths to be aware of our emotional state – and to impact that emotional state by changing our physical state. ▲

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Dealing with the Environment

Why actuaries should be involved in dealing with environmental issues

The Institute's list of areas of focus for its public policy advocacy includes helping to manage and mitigate risks associated with energy and the environment. This article from the Climate Change Committee describes why issues relating to energy and the environment are relevant to actuaries. The article focuses on climate change as the most significant current issue. Other environmental issues such as water management and loss of biodiversity have similar characteristics but on a lesser scale.

Beyond Insurance

Many actuaries already have to deal with the financial consequences of climate change through their work in the general insurance industry. Climate change is anticipated to have such profound and universal consequences that actuaries, as risk managers, can make a contribution to dealing with many aspects of the issue, reaching well beyond the insurance sector.

The issue of climate change needs to be considered from several points of view:

- the unavoidable physical, economic and social impacts of changes in weather and sea levels;
- the adaptation measures that are taken to mitigate the unavoidable impacts;
- the policy responses and voluntary changes in behaviours aimed at reducing greenhouse gas (GHG) emissions and thereby controlling the extent of climate change; and
- the accelerated introduction of new technologies and infrastructure.

All these aspects involve action to varying extents by government, business and consumers, and all are expected to have material financial consequences. As a result, governments are increasingly accepting that they need to take the lead if the required economic changes are to be achieved.

Normally, new products are adopted automatically because they are seen to be better than current technologies for reasons of cost or efficacy. In the current situation, governments around the world are increasingly either (a) introducing charges for the potential economic cost of GHG emissions or (b) offering alternative incentives for the adoption of new technologies or behavioural changes. Often the development of these solutions involves the understanding of the operation of market instruments (e.g. emissions trading schemes or long term carbon reduction instruments derived from forestry or soil management schemes).

Climate Change Brings Uncertainty

The effectiveness of actions aimed at reducing emissions will become apparent over long timeframes and is very uncertain. In addition, the progress of climate change that is already beyond our control and the climatic responses to measures to control greenhouse gas emissions may be modelled but are also uncertain.

At the same time, the economic measures taken by governments in an attempt to mitigate the effects of climate change will have effects on future behaviour and the values of assets across the whole economy. It is clear that they will materially affect the aggregate demand for capital in the near and medium term, change the nature of many businesses, and materially modify the risks attaching to their equity and debt.

Actuaries can Deal Effectively with Uncertainty

Actuarial science is designed to deal with situations of uncertainty. The principles of the actuarial control cycle and the associated management of risk have direct application to many of these issues.

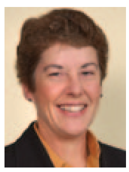
The increasingly broad range of roles taken by actuaries in financial and commercial entities includes solvency management, financial reporting and commercial risk assessment and pricing. These roles require an understanding of potential broad economic change. Actuaries are well placed both to develop that understanding and to apply it effectively.

Management of Policy Implementation

Radical changes are required in the way energy is used by manufacturers, the commercial and retail sectors and households. The effectiveness of these changes will need to be measured and monitored. This will require careful selection and analysis of data over time that compares changed practices with "business as usual" and effectively identifies the factors leading to changes in greenhouse gas emissions. Actuaries have considerable experience in processing long term data.

The Institute's View

The Institute's public policy states that its involvement in energy and environment issues is an opportunity to position actuaries as valued advisors on significant inter-generational problems. There are already several actuaries working in energy and environment related fields. There is potential for much greater involvement and ultimately this may become a significant employment area for actuaries.



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The Impact of Liability Profile on Investment Strategy for Insurers

The article below is an extract from a paper of the same title which was presented at the Institute's Financial Services Forum in May 2010. The paper is available at the Institute's website.

The GFC has proven that adverse outcomes in financial institutions can have serious consequences for a country's "real economy", and in some cases even affect the economies of other countries. Policymakers worldwide must now be considering whether there are adequate safeguards (either via explicit restrictions on investment choices or via capital requirements) to ensure prudent investment management within major financial institutions.

Regulated General Insurers, Health Insurers and Life Insurers in Australia are not subject to direct regulatory controls as to their investments, although capital requirements generally mean greater investment risk leads to higher capital charges. Effectively managing investment risk is key to maintaining the stability of insurers.

Risk Appetite

Risk appetite is a key consideration in setting investment strategy. Risk appetite can be expressed in many ways: "risk" may be a deviation in planned profit, capital surplus or changes in a proxy measure of shareholder value (such as embedded value). Risk appetite therefore defines the way in which an insurer will measure its liabilities for asset-liability management purposes. Regardless of the approach taken, there will be a measure of liabilities that can be used to define a matched asset portfolio.

Investment risk can be divided into risk which arises from all of the following:-

1. **Strategic Asset Allocation**
2. **Active Management**
3. **Stock Selection**

Responsibility for determining the strategic asset allocation for the insurer's investment assets will typically lie with the Board or a Board Committee (with input from management). This strategy will define the target split between various high level asset classes, and will typically be set with the intention of the strategy being sustainable in the long-term in "normal" conditions. In setting the strategic asset allocation, the insurer will almost certainly have regard to the nature of the liabilities and the insurer's investment risk appetite at a particular point in time.

More often than not, responsibility for implementing the investment strategy will be given to a separate group of individuals. A typical structure will involve appointing specialists to manage investments within each asset class. Indeed, common practice is to have several managers in each asset class – with each manager seeking to outperform a market-cap weighted index within a risk tolerance specified by the insurer.

We can identify several problems with this approach:

- **Changing financial circumstances and/or appetite for risk:** The strategic asset allocation is set at a point in time, and will have regard to the insurer's current financial position and risk appetite at that time.
- **Disconnect between liability-related risk, and 'risk' as defined by the investment manager**
- **Narrow focus:** A manager in a single asset class is focussed purely on the portfolio that they manage, and the benchmark against which they are assessed.
- **Changes in market benchmarks**

We believe that a best practice investment framework for insurers considers both the minimum risk portfolio, as well as the investment risk appetite *at every stage of the investment process*. We believe that the investment risk appetite varies as the financial circumstances of the insurer and the financial climate change. We believe that the current investment governance models of some insurers fail to consider these issues with sufficient frequency or clarity.

We would advocate an explicit consideration of liabilities when setting investment strategy, and we would consider that a governance structure involving an Asset Liability Committee (ALCO) represents a good template for this.

The ALCO's mandate to control investment decisions should be expressed in terms of deviations from the minimum risk portfolio (rather than a benchmark asset mix with limits), and may include greater discretion to move towards that minimum risk portfolio than away from it. The intent is to facilitate a more dynamic process of adjusting the targets that are set for individual investment managers than a relatively static benchmark asset mix.

The ALCO is the critical link in the governance framework that requires as input:

- definition of risk and a measure of risk appetite;
- details of the liability profile both in terms of the key risk measure of the organisation (e.g. P&L, measure of liabilities, etc) and alternative measures that will be relevant to the organisation (e.g. regulatory capital); and
- investment expertise.

It is important that the ALCO not be narrowly focussed on a single measure of risk.

Treasury Function

One concept that is widely used in banking, but which is not common in insurance, is that of a Treasury. We believe that there is merit in insurers considering such a structure, as it separates the insurance business and the investment business, and allows appropriate management responsibilities to be defined.

The Treasury function of an insurer would essentially set a transfer price that would allow the insurance side of the business to manage its insurance exposures and (largely) ignore investment issues. Under this model, the Treasury function would provide a "matched" investment return to the insurance side of the business and Treasury would then assume responsibility (under the guidance of the ALCO) for dynamically managing the insurer's investment risk. The approach does pose some challenges for Life Insurers, particularly where products are dependent on investment returns (e.g. traditional participating business). Nevertheless, the concept can be applied to almost any insurer. Diagram 1 (below) indicates how the Treasury function would operate.

Role of the Appointed Actuary

Generally, the Appointed Actuary's actuarial advice is provided to the Board of the insurer, but may also be provided to Management. Insurance legislation also requires the Appointed Actuary to report directly to the regulator in prescribed circumstances.

An insurer's Appointed Actuary is required to provide advice on the insurer's financial condition, which we suggest includes (as just one aspect of that advice) comment on the matching of the insurer's assets in relation to the insurer's liabilities. We suggest that this advice can be summarised as follows:

Diagram 1: Treasury Function

Under the Treasury model, the objective of specialist investment managers continues to be to add value relative to the manager's asset class benchmark, subject to the risk tolerances articulated by Treasury to the manager from time to time.

Any deviation from the benchmark portfolio within a given asset class represents a risk to the insurer, and the impact of this incremental risk should therefore be incorporated into the aggregate risk appetite of the insurer.

In most instances, provided portfolios are well diversified, the role of Stock Selection can be expected to be of second order importance relative to the impacts of Strategic Asset Allocation and Active Management.

Benefits of Approach

This approach to investment management is designed to facilitate a more dynamic approach to setting asset mix that responds to the changing position of the insurer, rather than being reliant on a discrete exercise to update a benchmark asset mix expressed as target percentages in particular asset classes. In practice, this may be how many insurers effectively operate, with actual asset mix adjusted within approved bands until a limit is reached, prompting a need to reassess the base benchmarks. However, a more explicit dynamic approach that defines the target in terms of a (constantly changing) matched portfolio may allow insurers to more closely align their actual risk exposures to their target risk exposures.

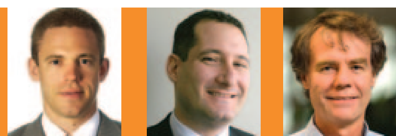
The use of a Treasury function separates responsibilities, allowing insurance business managers to focus on the insurance business, while investment managers can take full responsibility for the investment management. The Treasury has responsibility for dynamically managing the asset liability mismatch risk to reflect the insurer's risk appetite, current solvency position, market outlook, etc. This enables a clearer separation of responsibilities for internal performance management, and for communicating results both internally and externally.

- communicate the capital implications of investment decisions arising from the insurer's regulatory capital requirements;
- communicate the investment-related implications of the insurer's liability profile, including articulation of the minimum risk asset portfolio;
- develop appropriate trigger points, including the actions which need to occur at those points;
- communicate any cash flow patterns and liquidity constraints which have implications for investments (including taxes, dividends, transfers, etc);
- calculate and communicate the investment component of the insurer's total risk budget; and
- regularly monitor the suitability of the insurer's overall investments in the context of the insurer's investment risk appetite.

To perform these functions, an Appointed Actuary needs to establish a working relationship with those who are responsible for investing the insurer's assets, such that the Appointed Actuary is able to discuss the characteristics of the insurer's investments on a two way basis, recognising the role of investment personnel in the selection of individual investments.

The work of the Appointed Actuary for Australian insurers is performed currently in accordance with standards and guidance prepared by the Institute (unlike many overseas jurisdictions, where standards boards separate from the profession now operate). The legislative requirements for the work of the Appointed Actuary generally reference the Institute materials. In performing the Appointed Actuary role, the actuary must look further than the wording of the professional standards and regulatory requirements, and perform that role based on the circumstances of the particular insurer. ▲

L-R: Anton Kapel, Graeme Miller and Rob Paton



Longevity 6

Sixth International Longevity Risk and Capital Markets Solutions Conference

Hosted by Australian Institute of Population Ageing Research in the Australian School of Business, UNSW

The International Longevity Risk and Capital Markets Solutions Conference is the major annual international conference bringing together leading international industry and academic minds as well as policy makers. They meet and discuss not only the assessment of longevity risk, but also the market and government developments and responses needed by pension funds and insurance companies to manage this risk.

The Sixth International Longevity Risk and Capital Markets Solutions Conference (Longevity 6) was held on 9 and 10 September 2010 in Sydney at the famous Bondi Beach. The conference followed the highly successful events over the last five years in London, Chicago, Taipei, Amsterdam, and New York. Longevity 6 was hosted by the Australian Institute for Population Ageing Research and the Australian School of Business at UNSW. The key themes of Longevity 6 were 'Reinsurance and Financial Markets Solutions'; 'Government Role, Public and Private Sector Solutions'. The conference attracted 120 participants from 15 countries in Asia, UK, Europe and North America proving to be highly successful with strong industry and researcher participation.

David Blake (Pensions Institute, UK) opened the conference highlighting the significance of the longevity risk in pension plans and insurers and the need for reinsurance and financial market solutions as well as the involvement of key policymakers. Developments in the life market including recent longevity swaps and the formation of the Life and Longevity Markets Association (LLMA) and their role in providing solutions were outlined. The aims of the conference in bringing together leading international practitioners and researchers and providing policy and market solutions were emphasised.

Panel Discussion

There were three plenary sessions with eight international plenary speakers and eleven workshop sessions with 34 papers presented at the conference. At the opening plenary session, Guy Coughlan (JP Morgan London) covered the developments in the formation of the LLMA. There are ten current members of the LLMA comprising AXA, Deutsche Bank, J.P. Morgan, Legal & General, Morgan Stanley, Pension Corporation, Prudential, RBS, Swiss Re, and UBS. The challenges of the market and the role of LLMA were outlined as well as the draft Longevity Index Framework published by the LLMA on 18 August 2010.

Morton Lane (Lane Financial Chicago and University of Illinois) then presented his thoughts on the development of the longevity market from the perspective of the insurance-linked securities (ILS) market. He noted how the ILS market had developed based on a bond structure, whereas the transactions in the longevity market have been swap or derivative based. He discussed the importance of having a 'trigger' for payments on the security that was an event. In the ILS market this was a well defined event generating claims such as specified hurricane losses or extreme mortality rates. This was not the case in the longevity market. Morton also discussed the important pricing role of the ILS market and the need for transparency of pricing currently lacking in the longevity market.

Guy Coughlan then presented on the role of longevity indices and hedging of longevity risk. He provided a framework for evaluating basis risk and hedge effectiveness and demonstrated this with a case study. Index based transactions will, and currently do, play a major role in managing longevity risk and these require the development of reliable longevity indices.

The first group of workshop sessions had an emphasis on modeling, pricing longevity risk and instruments to manage the risk. Index construction and the role of collateral in managing credit risk for longevity markets were also covered. Economic, financial and econometric approaches were featured in the papers presented in this session.

The second group of workshop sessions covered hedging and hedging effectiveness for longevity risk. Various products such as life annuities were featured as well as optimal portfolio choice when annuities are included in the portfolio. Other issues related to health and self insurance of longevity risk were also covered.

In the second plenary at the close of the first day, Ross Jones (Member and Deputy Chairman of the Australian Prudential Regulation

Authority) provided an international regulator's perspective. This included the policy response to the financial crisis in pensions, as well as setting the Australian longevity market in context. He highlighted how regulators have a role in implementing policy but do not develop policy. He addressed the issues of funding of defined benefit plans, the adequacy of retirement savings and the lack of financial instruments to hedge longevity risk.

He summarized key OECD recommendations explaining how governments can help by:

- providing updated mortality tables incorporating longevity improvements;
- developing a longevity index that can be used for pricing; and
- issuing inflation-indexed long dated bonds to facilitate asset-liability management.

The importance of investing in research was also noted as a significant part of the solution for both government and the private sector.

Martin Clarke (Executive Director of Financial Risk, Pension Protection Fund, UK) then covered how the Pension Protection Fund in the UK approaches longevity risk including its approach to modeling and hedging. The fund targets self sufficiency over a longer horizon and sees longevity de-risking as a longer term strategy.

David Blake (Professor of Pensions Economics and Director of the Pensions Institute, Cass Business School) then made the case for why governments should issue longevity bonds. This would improve the efficiency of the retail annuity market, enhance the hedging of aggregate risk in financial markets and provide a price discovery market for longevity risk which is currently lacking. The government has an important role to play because it is the only participant who can provide the required intergenerational risk sharing.

The third group of workshops at the start of the second day covered:

- policy and regulatory issues;
- reverse mortgages and the related issues for this longevity product; and
- modeling of longevity including econometric techniques and spatial modeling.

In the final plenary at the end of the conference, Marco Flores (Managing Director, Credit Suisse, London) provided a coverage of the longevity swap market and how the transactions actually work in practice. Michael Crane (Managing Director, Coventry Capital, UK) covered the regulatory developments in the life settlement market in the US, the "micro longevity risk" market. Life settlements are a way investors gain exposures to longevity risk through investing in portfolios of life insurance policies. This was followed by a Panel session with Guy Coughlan (JP Morgan London), Morton Lane (Lane Financial Chicago), Brandon Lewis (Director, Capital Markets, Coventry Capital, Sydney) and Lawrence Tsui (Director, Life & Health, Swiss Reinsurance Company Ltd, Hong Kong) to discuss three topics:

Patricia Berry

1) Sustainable products/structures are being provided by innovation in the private sector for longevity risk management;
2) Active government support is required for the development of a wholesale and retail market in longevity risk, and
3) Education of investors is required to ensure the success of a market in longevity risk.

It was generally agreed that:

- the market is innovating and this is healthy for the future;
- some aspects of government support would be welcome whereas the government taking on more longevity risk was less enthusiastically supported; and
- although education is important, some forms of education revolving around product sales and marketing were less beneficial.

The conference was made possible with the support of the excellent range of international speakers as well as financial support from the sponsors: PricewaterhouseCoopers, APRA, AIPAR, Coventry Capital, Swiss Re and the Institute of Actuaries of Australia. Support from the Pensions Institute at Cass Business School and the School of Actuarial Studies at UNSW resulted in a well run event.

Future Longevity conferences are scheduled for Frankfurt in 2011, Toronto 2012 and Beijing 2013.

The Geneva Papers on Risk and Insurance – Issues and Practice will publish a dedicated issue containing selected papers from those presented at the conference in October 2011.

Conference proceedings including presentation and papers are available from the web site http://www.longevity-risk.org/

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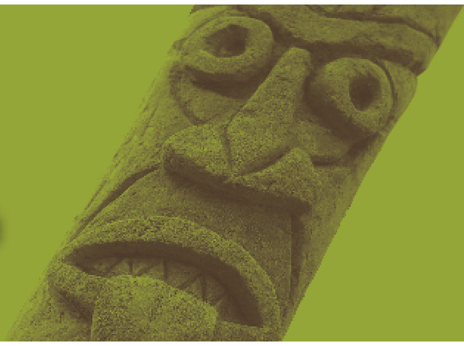
Why Work in New Zealand?



My name is Paul Newfield, an Australian actuary, and from 2007 to early 2010 I was fortunate enough to be seconded, as an actuary, to live and work in New Zealand. It was a fantastic experience and one which I will never forget.

Fortunately for me I have still been able to continue my association with New Zealand and have been in New Zealand frequently in 2010 for work.

This article outlines some of the opportunities and reasons why I believe that actuaries and individuals training to be an actuary should give consideration to having, at a minimum, some time in New Zealand as part of their professional training (and a number decide to stay permanently).

On 24 September 2009, the Prime Minister of New Zealand, John Key, appeared on the David Letterman show in the USA and presented his top 10 reasons to visit NZ. Among those listed were:

No 8. It's only a convenient 20 hour flight away (note this does arise for actuaries in the US, Europe or the UK but for Australian actuaries – Auckland and Wellington are closer than Perth if you live on Australia's east coast).

No 5. Get the whanau together, stay in a bach, crack open the chilly bin and slap on your jandals (a bit of local jargon and after spending close on 10 years in Melbourne prior to coming to New Zealand, there is "a lot of lingo to learn").

No 4. The Prime Minister even offered "visit in the next 30 days and I'll pick you up at the airport", obviously in jest. New Zealand is an egalitarian society and there are tremendous opportunities to work with people at senior business and in some cases Government levels.

No 3. "70% of our energy is generated through renewable sources" and;

No 2. "we drive on the left side of the road, like the British and Lindsay Lohan."

While these are tongue in cheek with an element of humour, it gives both Australian and overseas actuaries an insight into how New Zealanders see themselves.

I have lived the New Zealand experience and in sticking with the theme above, I thought of several other appealing reasons why some Australian actuaries may find a move to New Zealand, even for the short term, of interest.

So here is my top 10 (hopefully of greater use than John Key's):

No 10. New Zealand is a magnificent country, as picturesque a place as I have ever seen. From the Bay of Islands in the North Island to Queenstown, the Southern Alps and the ski fields in the South Island there is much to see (and not far to travel to see them) in New Zealand.

No 9. New Zealand has cut personal tax rates from 1 October 2010. While working for Mercer in New Zealand, our analysis on the 2010 New Zealand budget showed that this would make New Zealand substantially more competitive with Australia in terms of net salaries. Under the previous income tax regime, an employee in New Zealand would have to earn more than NZ$198,000 before their net take-home pay was greater than the equivalent Australian employee. The reduction in personal tax rates has reduced this cross over point to around $43,000 i.e. dollar for dollar, you are better off in New Zealand, in so far as after tax pay, if you earn more than $43,000.

No 8. The Mercer 2010 Cost of Living Survey showed that New Zealand is generally cheaper to live in so far as costs for ex-pats, relative to Australia. The survey covers 214 cities across five continents and measures the comparative cost of over 200 items in each location for ex-pats who have relocated to various cities around the world. Australia's most expensive city, Sydney, ranked 24th, followed by Melbourne (33), Brisbane (55), Perth (60) and Canberra (74), while Adelaide (90) is the country's least expensive city. In New Zealand, Auckland ranks in 149th place, while Wellington is the least expensive city of the two (163).

No 7. The Mercer 2010 Quality of Living Survey showed that New Zealand does provide a value proposition or equivalence in so far as quality of life relative to Australia. In the survey, Mercer evaluated living conditions in 420 cities worldwide, rating them out of 10 categories. The cities are all evaluated against New York – which is used as a benchmark. In the survey Auckland topped the Asia Pacific category and came in at 4th equal, Wellington came in at 12th with others ranked as follows Sydney (10), Melbourne (18) and Perth (21).

Paragliding at Michaels Mistake,Christchurch

Between No 9, No 8 and No 7 above – it means you can earn relatively better after tax than in Australia (potentially) and enjoy a lower cost and better quality of life.

No 6. New Zealand is known as the "adventure capital of the world" and for those interested, 'Adventures in Risk' was the theme of the Institute of Actuaries of Australia's 2007 conference held in Christchurch. New Zealand is the place to be and from personal experience I would recommend Queenstown as a must.

No 5. As a country with a smaller actuarial community, there is often the opportunity to work across a range of actuarial areas and be involved in interesting work. However, there are limited amounts of work in certain actuarial fields and my recommendation is to secure or explore in some detail any work opportunity before moving to New Zealand.

No 4. There is a lot of change going on in a number of areas of actuarial endeavour in New Zealand and I suspect this will be the case over the coming years. For example, the Insurance (Prudential Supervision) legislation is bringing increased regulation to the insurance industry. For actuaries, change is synonymous with opportunity and challenges and there is an opportunity to gain experience, live life in a beautiful country and make a contribution to the actuarial landscape in New Zealand.

No 3. Many New Zealanders are quite entrepreneurial and progressive and New Zealand has a number of world firsts to its credit. In the early 1890's, New Zealand granted women the right to vote, becoming the first country in the world to do so. New Zealand was also the first to introduce a social security pension in 1898). I also believe that in a number of business areas New Zealand is and is looking to innovate into the future. In some areas they may take learnings from Australia while in others I believe New Zealand offers a great incubation opportunity to develop and deliver solutions which could then be exported to other countries, including Australia.

No 2. Many individuals, actuaries and non actuaries alike (look around the Australian landscape, there is no shortage of evidence) have come over to New Zealand, taken on management or senior roles and have been able to demonstrate capability in the New Zealand market. These individuals have then been able to return to Australia and continue similar roles in either an Australian capacity (with broader or larger responsibility) or even at an ANZ or higher level.

No 1. New Zealand is hosting the 2011 Rugby World Cup.

James Xu

In addition to the above which reflects my own thoughts and every actuary knows a sample of one is not much on which to base any conclusions, I spoke with James Xu to gain a further perspective on actuaries coming to New Zealand and working in the actuarial arena.

James came from China originally, then studied in Sydney, after which he spent just under a year each working in China and Hong Kong, and about half a year in Zurich, then returned to Sydney and then came to Wellington to work for AXA in January 2010.

Early in 2010, James jumped off a plane, with the parachute on his back of course (good risk management skills of actuaries and aligns with New Zealand No. 6 from the list above). He said that "even though the wind here in Wellington is really strong, I still managed to survive and found myself a place in AXA, carrying on my actuarial journey in this beautiful country".

James says that he enjoys working in different countries. In terms of New Zealand, James says that "Wellington is just like Zurich – that's the way I felt on my first day here. Sitting in the café along the street, watching people casually walk by, you do start to feel like melting in this warmth and sunniness – just like people here say, nothing beats Wellington on a sunny day." As someone who lived in Auckland during my three years and spent much time in Wellington, I could debate that, but I digress.

James also says that in New Zealand "you do get exposed to a whole variety of tasks in a short period of time so that you should expect yourself to potentially grow even faster then before or outside of New Zealand".

Before undertaking a sabbatical to New Zealand, I would suggest you look into work options before you leap and visit the New Zealand Society of Actuaries website (http://www.actuaries.org.nz/) and look up and talk to some of the actuaries practising in New Zealand. ▲

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JASS Ball

A Night of Unforgettable Glamour

JASS Ball snapshots

What is JASS Ball? Actuarial students at both Macquarie University and University of New South Wales both gather for a night of scintillating performances, a scrumptious three course meal and an electrifying dance floor. The event itself expels the myth of the boring actuarial student whose spare time is spent analysing statistical distributions, and highlights the emergence of the modern student who is always in the mood to get away from the textbooks, dress up and have a great night out.

On 18 September 2010, Sheraton on the Park was without a doubt the place to be. This year's theme was the Academy Awards; the red carpet was rolled out and Oscars were handed out to the best dressed guests, performers and winners of various fun activities. The catwalks generated the loudest noise as students cheered on their own university's entries, confirming that a friendly rivalry was indeed apparent on the night between the two universities.

Throughout the evening, the entertaining MCs introduced some of the most talented actuarial performers ever witnessed. Gana Aruneswaran blew us away with his amazing guitar recital. The dexterity and musicianship was demonstrated with the upmost professionalism as he showcased one of his own melodious compositions.

It was however the magician Danny Yan which left even the brightest actuarial minds in the ball room stumped as he reproduced his version of the famous Berglas Effect. It required two individuals from the audience, where one named a type of card (8 of Spades) while the other chose a number between 1 and 52 (12 was picked). Then another individual slowly revealed each card from the top of the deck and unbelievably, the 12th card was the 8 of Spades. The magician performed this trick without even touching the cards. Actuarial talent was on full display throughout the night!

After the performances and meals, the DJs set the atmosphere, while the actuarial students exhibited their gravity defying dancing capabilities. There was 'break dancing', 'pop and lock' and countless other ecstatic dancing styles as students from both universities came together to shake a leg and let their hair down. It was without a doubt, an amazing and unforgettable night, a night where memories were created and new friendships formed. ▲

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Dear Editors

I read, with disappointment, Gae Robinson's views on the Presidential Medallion and would like to both correct a common misconception and express an alternate view.

The Presidential Medallion – and emblem of the Institute – does not feature the grim reaper. It shows Father Time with hour glass and scythe, standing on the Wheel of Life, set against a background of the Southern Cross. It also originally featured Australian gum leaves, the New Zealand silver fern (stemming from the days of the Institute of Actuaries of Australia and New Zealand), and actuarial and mathematical symbols. The funding for the medallion was contributed by the Life Offices Association to mark the formation of the Institute. (source: Bellis, The Future Managers, 1997, p120).

The Presidential Medallion represents one of the only remaining icons of the Institute's origins and long history in Australia. It is symbolic of the very concept of a 'profession' that inspires others to achieve and joins all in a special community from which they garner reputational advantage.

So, in the words of that great philosopher – Bob Marley – I would say to Gae's anonymous friend, "in this bright future you can't forget your past". Can I suggest that, if 'anonymous' does not wish to wear the Presidential Medallion, he drape it over his motorbike for a more contemporary feel? ▲

Anne Peters
Director – Governance and Regulation, Company Secretary

education update

Part III Exams

There were a total of 546 Part III exams sat in Semester 2 2010. In courses directly assessed by the Institute of Actuaries of Australia (C1 Investments , C2A Life Insurance, C2B Life Insurance, C3A General Insurance, C3B General Insurance, C5A Investments Management and Finance, C6B Global Retirement Income Systems, and C10 Commercial Actuarial Practice) 469 exams were sat in 27 locations around the world. Exams for these subjects were held between 18 and 22 October 2010. A further 78 members (11 of whom were Fellows) sat the UK ST9 exam as the assessment for the Institute's Course 7A Enterprise Risk Management course. The UK ST9 exam was held on 12 October 2010.

The tables below show the number of students at each location.

C1, C2A, C2B, C3A, C5A, C6B, C10	
Exam location	**No. of students**
Sydney	299
Melbourne	84
London	17
Singapore	16
Hong Kong	13
Canberra	9
Kuala Lumpur	9
Auckland	6
Brisbane	3
Perth	3
Adelaide	2
Hobart	1
Thailand	1
Netherlands	1
Canada	1
China	1
Korea	1
Wellington	1
Switzerland	1
TOTAL	469

C7A ERM (assessed by UK ST9 exam)	
Exam location	**No. of students**
Sydney	47
Melbourne	14
Singapore	4
Hong Kong	3
China	3
Auckland	2
Japan	2
London	1
Canberra	1
Wellington	1
TOTAL	78

A great deal of hard work has gone into preparing for the Semester 2 2010 exams. I would like to thank all the Course Leaders and other volunteers for their role in writing the exams; scrutineers for reviewing and road testing the exams; External Examiners, Chief Examiners and the Chair and Assistant Chairs of the Board of Examiners for their role in reviewing and approving exams; exam supervisors all around the world; and exam markers. Finally, I'd like to thank Rebecca Moore, the Institute's Volunteer Manager, for keeping everything on track with the exam development, review and marking processes and Shreya Trasy for her work with the exam administration liaising with students and exam supervisors.

In particular, I would like to thank Anthony Brien, the Chair of the Board of Examiners for the third successive semester, for all his hard work.

Part III results will be published on 16 December 2010. ▲

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Go to your happy place

It seems that actuaries are positive people. In last month's *Pulse* survey, 81% of the 300+ respondents said they have a positive attitude to life, 13% were neutral and only 6% were negative.

Judging by the results, being an actuary is a very rewarding career, with close to 85% of people considering themselves a success in their career to date. As expected this result had a strong age-based pattern, with younger actuaries (especially those yet to qualify) rating themselves the least successful whilst 100% of those aged 55+ (around 12% of respondents) rated themselves as successful. It appears that actuaries have plenty of room for career advancement, with a strong pattern of becoming more successful as we get older.

I prefer to think that the reason we are so successful is that as a group, we have a positive attitude to life. But perhaps it's the other way round, we are positive because we are so successful. There is another explanation – that the positive people have achieved exactly the same success as others – however because they have a positive outlook they perceive that they are more successful! And if so, good luck to them I say.

Either way, there are good reasons for those entering our profession to expect that they will become successful too!

Women rate themselves as less successful

What caught my interest was the fact that females were proportionally over-represented in the 47 people who did not consider themselves a success. I have noticed this trend before for women (and I do not exclude myself), to under-rate themselves compared to their male counterparts of equal ability. Perhaps it's a testosterone thing…

Men sometimes find it hard to understand why women want to be part of all-female support networks (such as the informal actuaries women's lunches that have sprung up in Sydney and Melbourne this year). This difference in self-confidence is one reason why these women's networks are so important – many women need that extra little bit of support and encouragement, and can really benefit from strong female role models and good mentors (of either gender).

There is no doubt that these things are beneficial to men as well, but there my theory is that there's something in a woman's psyche that needs that additional bit of encouragement to apply for that promotion or ask for that pay rise (perhaps this is another factor in the male / female pay disparity).

Importance of Connections and Networking

Of those who rated themselves as not successful, the most commonly cited reason (at 29% of respondents) was a lack of connections / networking. The power of the network is one of the things I talk about to new actuaries at the Professionalism Course. Once you get to a certain point in your career, being good at your job is almost a given. What then gives you the edge is who you know, and who you have worked with. This is why volunteering for the Institute is such a rewarding experience – it helps you build your skills and also assists you to build a network.

New search tool launched on website

I am pleased to announce that on 29 October we launched a simple search mechanism to allow you to more easily find the 3,200 documents, audios and videos which are on the website. These have been on the website since launch, but the Google search we had in place as a stop-gap measure made these difficult to find.

The new tool can be found under 'Information and Knowledge', then 'Search Resources'.

You can search by event, by author or by type of resource whether it be document, audio, video or presentation.

The Google text search is still available at the top right of every screen. So for example if you want to see all the audio files, you can now either:

- Use the search tool, select 'Resources' and choose 'Audio'... or
- Type 'Audio' (not 'audio') into the Google search bar.

As usual, if you cannot find something, please email us and we will assist you. ▲

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