Newsletter
June 2011
The Society of Actuaries in Ireland

New Qualifiers' Reception in the Royal College of Physicians

Back Row L to R: Karen Walsh, Finian Raftery, Emma Ryan, Colin Murphy, Donal O'Leary
Middle Row L to R: Aoife Beirne, Cian O'Muircheartaigh, Colm Kelly, Sheila Harney, Brian O'Connor, Pamela Doran, Kenneth Deane, Aisling Kelly
Front Row L to R: Ciara Crinion, Brian Curran, Kevin Murphy; SAI President, Niall Alexander, Sheila Harty.

Professionalism Course for New Qualifiers.

The Society hosted a Professionalism Course on the 10th and 11th of March at the Druid's Glen Resort in the Wicklow Mountains. Many of the new qualifiers in the above photograph attended this course. The course was well attended, with 49 attendees from all areas of the profession with various backgrounds, which made for interesting and lively discussions throughout the 2 days.

Present throughout the course were Yvonne Lynch, the Society's Director of Professional Affairs, Mary Butler, the Society's Director of Member Services, Emily O'Gara, the Society's Manager of Professional Affairs and Sarah Kearns, SAI Education Committee member, who did a fantastic job at coordinating the entire course.

After arriving at the hotel, registration and introductions were quickly over and the first part of the morning was spent discussing the theory and practice of professionalism, in particular the Society's Professional Conduct Standards (PCS) and their applications. As was also the case for the remainder of the course, this subject was approached in a very interactive manner involving case studies which were very well received.

Much of the rest of the day was used for the discussion of how the PCS applied to specific areas, with the help of experts from the various fields: Ger Bradley (General Insurance), Martin Haugh (Pensions) and Fergal O'Shea (Life Insurance), together with an outline of the developments and challenges facing the Financial Services Industry by Emily O'Gara. The day was rounded off with a Q and A session with the Society's Vice

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Professionalism Course for New Qualifiers ... *continued*

President, Paul O'Faherty and the experts mentioned above, who answered a number of questions from the floor, including several around the current challenges facing each of the various actuarial fields and also the Society's future direction and influence.

Drinks and a good dinner followed with lively entertainment in the form of a pop quiz from the Vice President while in the background a certain member of the Society took every chance possible to "encourage" Society participation for the innocent newly qualifieds. Celebrations continued through the night, and for some the early morning, with a few individuals racking up plenty of practice for the next X Factor.

All after effects from the night before were quickly banished the next morning with a hearty breakfast and the day kicked off with a video underlining the importance manner. Brian Morrissey then provided an interesting introduction to Solvency II and Enterprise Risk Management (ERM), hot topics that were discussed again and again over the course of the 2 days. A lively discussion ensued including how best actuaries could place themselves in the Solvency II and ERM landscapes and the new CERA qualification was also mentioned. The rapidly growing area of Health Insurance was next up, where John Armstrong emphasized the importance of the role an actuary has to play in this area along with the challenges they currently face.

Before the break for lunch, Elena McIlroy La Rosa, a recent new qualifier and a current active member of the Society, outlined ways in which newly qualifieds could become involved with the Society and welcomed suggestions on how newly qualified members' interests would be best met. Just like at the dinner table the previous evening, participation was once again strongly "encouraged".

After lunch, Mike Claffey provided detail on the Society itself and outlined the many ways in which fellows could become involved in the regular panels, discussions and other events and described the functioning of the Society's Disciplinary Scheme. He also provided an outline of the current CPD scheme.

Mike then stayed on to co-ordinate a lively workshop, culminating in a series of short presentations on some of the pertinent Society topics, such as the role of CPD in keeping actuaries relevant, opportunities for actuaries in ERM and from Solvency II and the future for the Society of Actuaries, which all yielded a number of fresh and interesting perspectives.

The course finished with the presentation of certificates and left all attendees ready to apply the thoughts and ideas generated during the 2 day course to their every day working lives. The author is sure that all the attendees would like to join him in thanking the organisers and speakers for all their effort and time in turning what could have been a formality into an interesting and enjoyable course.

Emmet Leahy

IFRS Insurance Contracts Phase II Exposure Draft

On Wednesday 9th March members of the Life Insurance Accounting Sub-Committee gave an interesting and informative presentation on the recent IFRS Phase II exposure draft.

The Meeting was opened by Paul O'Faherty, Vice President of the Society of Actuaries in Ireland.

Introduction to the Exposure Standard

The first presenter of the evening was Brian Morrissey. Brian gave an excellent overview of the exposure draft.

The IFRS Phase II exposure draft was published by the International Accounting Standards Board (IASB) in July 2010 and proposed a new accounting framework for insurance contracts. The IASB accepted comments on the exposure draft in 2010 and are currently working on the final accounting standard which is due in June 2011. The effective date of this standard is still to be finalised, however it could be as early as 1 January 2013.

In parallel to this the Financial Accounting Standards Board (FASB) in the U.S. released a discussion paper with their proposal on valuing insurance contracts. It is intended that both the IASB and FASB would set a common standard on insurance contract accounting, however there are still some key points of difference that remain between the approaches proposed by the two bodies.

The IFRS exposure draft proposes a new measurement for medium to long term insurance contracts based on a building block approach. Under this proposal, the total insurance liability is the sum of the following four building blocks:

- Probability-weighted current estimate of future cashflows of a contract
- Adjustment to allow for the time value of money
- Risk adjustment – an assessment of the uncertainties of the future cashflows
- Residual margin – initial profit to be amortised over the life of the contract

Brian discussed the details of each of these calculations including the discount rate allowed, the permitted techniques for calculating the risk adjustment and the cashflows included in the residual margin calculation. Some particular points of note were that the exposure draft allows only incremental acquisition costs to be amortised in the residual margin. It also does not permit the residual margin to be re-measured over time in light of changes in economic conditions.

Transitional measures for dealing with existing business were outlined along with the disclosure requirements under the proposed new standard.

Feedback from the Consultation Process

The next speaker was James Archer. James summarised the responses received by the IASB and FASB from insurers, trade organisations and accounting firms. Some interesting results from James's presentation included the following:

- 53% of respondents believed the proposed measurement model would increase the relevance of financial reporting for insurers. Although this looks quite low, James clarified that there was more support given to this approach in Europe than the U.S. Respondents in the U.S. believed that U.S. GAAP was already sufficient.
- 60% of respondents disagreed with the residual margin amortisation and most thought this should be adjusted for changes in non-financial assumptions over time.
- 93% of respondents disagreed with the proposed transitional arrangements for existing contracts.

The IASB intend to take the respondents' concerns and opinions into account when setting the final standard.

Comparison to Solvency II

The final presenter of the evening was Stephen Hardy. Stephen outlined the similarities and differences between the IFRS insurance contract valuation proposed in the exposure draft and the Solvency II valuation as described in QIS5. Some of the key comparisons were as follows:

- The present value of future cashflows under the exposure draft was compared to the best estimate liabilities in QIS5. Both of these calculations use a discounted cashflow approach but the allowance for expenses differ and the discount rates applied could also potentially be different.
- The risk adjustment under the exposure draft was compared to the risk margin in QIS5. The exposure draft allows various methods of calculations but QIS5 allows only the cost of capital technique with defined time horizons and cost of capital rate.
- The residual margin under the exposure draft does not have a comparable QIS5 calculation. This is the deferral of gains at inception under IFRS and the corresponding amount is held in available capital in QIS5.

Although there are similarities between the two valuation approaches, the level of differences is likely to mean that companies will need to invest time and resources into systems and controls for producing results separately on an IFRS basis.

The meeting came to a conclusion following recommendations from the speakers that companies should begin preparing for IFRS Phase II as soon as possible. The Society's Vice President thanked the speakers for their informative presentations. For further information on this presentation, including a copy of the slides and a podcast of the presentation are available on the Society's website.

Donna McEneaney

Will the Private Pensions

Tony Gilhawley presented to a large attendance on the topic 'Will the private pensions industry survive?' on Wednesday 23rd March. Given the title of the presentation some sceptics felt that the answer might be short but what followed was a lengthy and informative presentation. Tony covered various reasons which led to the current difficulties in the pension environment and the many changes it is going through.

State Pension

Tony opened with a slide from the Wright report, a review by the Department of Finance. He explained how the current pension conditions are as a result of changes over the past decades. The strong economic and earnings growth in the last decade led to a surge in current public and private pension liabilities and expectations. Even with no change to the current State Pension, Tony suggested it was unaffordable in the short term due to the rapid increase in the number of claimants combined with a requirement to significantly reduce Government expenditure over the next four years. Gross expenditure on State Pensions in 2011 will be circa €4.7bn, compared to just €1.7bn in 2001. The very positive demographics of recent years will no longer apply, with an additional 239,000 people attaining age 65 by 2021.

The surplus built up by the Social Insurance Fund (from which the Contributory State Pension is paid) was exhausted by 2010 and now requires a substantial Exchequer subvention in addition to employer and employee PRSI contributions. There are some other options for retrieving the cost suggested under the National Pensions Framework but none of these deal with the current cash flow issue. Tony concluded his discussion of the State Pension by outlining some immediate options for dealing with the increasing cost of State Pensions such as a reduction in benefits and tax increases, but felt that a reduction in the State Pension was likely, even if very unpalatable from a political point of view.

Public Service Pensions

Public Service Pensions are also paid from current taxes and their cost has also rapidly escalated in recent years due to benchmarking increases and increasing number of public service retirees. There are a wide range of schemes within the public service with varying levels of benefits. The benefits are paid out of cash flow so benefits have been the main focus and long term cost was not fully considered. As Tony nicely put it, added years were handed out like 'snuff at a wake'. Even with the recent pensions levy and pay cuts, the Exchequer gross expenditure on public service pensions is likely to increase by 12% over the next four years to €3.1bn.

National Pensions Reserve Fund

The National Pensions Reserve Fund (NPRF) was established to pre fund part of the real increase in the cost of public pensions, i.e. State and public service, from 2025 onwards.

Notionally 2/3rds of the NPRF was allocated to meeting future State Pensions and 1/3rd for public service pensions.

However by using the NPRF to recapitalise the banks, with a highly uncertain return on this investment, the NPRF is in effect already spent and hence the future cost of public pensions will be unsustainable without the benefit of the NPRF.

Private Pensions

Tony outlined the headwinds that the private pensions ran into over the last ten years. In addition to the impact of longevity, investment, salary inflation and tax, pension arrangements have recently been targeted by the Exchequer as a potential source of increased tax revenues through various restrictions and reductions in private pension tax reliefs.

Poor investment returns are part of the reason that the number of defined benefit pension schemes failing the funding standard has increased so much since 2007, in addition to increased longevity and earnings growth.

The consensus managed fund, a typical defined contribution default fund, has shown patchy returns over the last 10 years with many contributors experiencing negative returns if you take into account the poor switching decisions that were made as the market turned. OECD pension returns show Ireland with significantly worse pension investment returns than all other countries during 2008 as Irish schemes were over-exposed to equities, including Irish equities.

One response to defined benefit scheme deficits is the proposed introduction of Sovereign Annuities. Tony suggested that Sovereign Annuities could turn pensioners into bondholders and may be viewed as a last resort. Another proposal is to restructure defined benefit schemes, for instance fixing the costs for members and employers. This would result in a flexible benefit but one which may be difficult for members to understand.

Tony commented that as only 13% of the workforce are in defined benefit pensions it's important that other types of pension scheme are given more consideration. Given that nearly half the workforce have no private pension provision, it has been suggested that auto-enrolment with voluntary opt out would be implemented by 2014, but this now seems unlikely.

Taxation of Private Pensions

A review of the pensions tax system took place in 2005 and there have been a lot of changes in taxation of private pensions since. Of the 9 changes recommended in the 2005 review only 3 were implemented at the time; the cap on retirement fund, a cap on lump sums, and the 3% pa (now 5% pa) notional distribution from ARF's.

The 2005 limits on the maximum tax relieved pension funds and tax free lump sums were further reduced in Budget 2011. It is important that the registered administrators of schemes are aware of their tax exposure as they now have a 'joint & several' liability with the member for any tax arising where benefits in excess of the limit are provided. They need to ensure that the tax is paid or benefit reduced within 3 months otherwise the tax liability increases. Members in the public service don't have the option to reduce their benefit and must pay a tax liability arising on a chargeable excess or lump sum immediately at retirement.

The Fine Gael election manifesto contains a €500m p.a. additional tax revenue item in respect of further restrictions on private pension tax reliefs. The Government 4 Year Plan suggested a phased reduction in pension tax relief to standard rate by 2014; however some sections of the pensions industry are suggesting an alternative of a 'temporary' 0.5% pa levy to be applied to all pension funds.

The temporary levy is viewed by many as the lesser of two evils when compared to the standard rate income tax relief. It is thought that the levy will be more of an issue for defined contribution schemes as it would be difficult to apply to underfunded defined benefit plans.

Summary

Tony concluded that there is an increased demand for alternative arrangements for saving for retirement due to the growing

Industry Survive?

number of rules, levies, taxes etc. under the current private pensions system. There is a role for private pensions in future but it is likely to be on a reduced level due to the Government caps on pension earnings and funding. The levels of current State and some public service pensions are unsustainable in any case and likely to be reduced in the future. An important lesson to learn from past mistakes is that, in giving a promise, we need to bear in mind the cost so it can be planned for.

Discussion

A number of interesting questions and comments were raised following the presentation. The discussion covered the following;

- The possibility of public service pensions paid through Sovereign Annuitites. Tony advised that this was politically unlikely given the Croke Park agreement in place. It may also suggest that default is anticipated which the Government would be keen to avoid.
- The likelihood of the implementation of the standard rate of tax relief on pensions. This is built into the four year plan but the IMF has advised there is room for manoeuvre, if the funds can be found from an alternative source. If the standard rate was to come into effect it would have a hugely negative impact on further private pension savings.
- The need for the existence of defined benefit plans to meet the continuing need for savings at retirement. There is some potential for defined benefit plans to continue but the problem with many plans is that the ageing population is coinciding with significant underfunding.

The podcast and a copy of the slides are available on the Society's website.

Aoife Singleton

Update from the SAI Pensions Committee

Members of the Pensions Committee continue to meet to discuss current pension issues. The main recent items for discussion have been the Consultation Paper on Defined Benefit Pension Provision, the impact of the proposed tax changes on pensions and recent revisions to ASPs.

Review of Pensions ASPs:

- The Minister for Social Protection has agreed the change in the pre retirement discount rate in ASP PEN-2 (Retirement Benefit Schemes transfer values) from 7.5% to 7.25%. The effective date of change is 1 June 2011.
- Revised versions of ASP PEN-3 (Actuarial Funding Certificates and actuarial statements under the Pensions Act 1990) and ASP PEN-4 (Funding Proposals under the Pensions Act) have completed consultation and have now also been approved by the Minister. The new versions will be introduced with effect from 1 July 2011.
- A Working Party and Focus Group have been established with a view to revising ASP PEN-13 (Conflicts of Interests) so that it covers broader conflict issues.
- ASP PEN-12 (Statements of Reasonable Projection - Occupational Pension Schemes and Trust RACs) has been revised following the recent ECJ ruling relating to the Gender Directive.
  A revised draft is currently out for consultation with members.
  The consultation period is due to be completed by 6 June 2011.

Tax Relief Sub Committee:

A sub committee has met several times to consider the issue of the proposed changes to tax relief on pension contributions. The sub committee also participates in a broader industry wide group with the same agenda.

Letter to the Minister for Social Protection

A letter highlighting two key pension issues for prioritisation was issued to the Minister for Social Protection. The issues in question were recent changes to tax relief and the review of the defined benefit pension system. The letter also requested a meeting with the Minister to discuss these issues.

Consultation Paper on Defined Benefit Pension Provision

The long awaited Consultation Paper on Defined Benefit Pension Provision has now been issued by the Department. The Society is currently preparing a response which will be discussed in detail at the Convention on the 27th May.

CPD

Pensions Committee is finalising its CPD agenda for the current session. In addition to the Pensions Convention on 27th May which will address the Defined Benefit Pension Provision Consultation Paper there is also a joint meeting with the APLI on 16th June. The topic will be Sovereign Annuities.

Gender Directive

On Tuesday 15th March 2011, a large crowd attended a presentation by Ger Bradley, Dermot Corry and Keith Burns on the impact of the recent European Court of Justice (ECJ) ruling with regard to the use of gender in calculating insurance premiums.

Ger summarised the background of the EU Gender Directive and the changes that will be brought about by the judgment of the ECJ. He then discussed the impact that the ruling could have on General Insurance. Following Ger's presentation Dermot looked at the possible impact of the ruling on Life Assurance and Keith finished with the impact on Pensions.

Impact of the ECJ Ruling – background

Ger explained that Article 5(2) in the EU Gender Directive contains an exemption for insurers to the prohibition of using gender as a rating factor. It permits differences in premiums or benefits where the sex of an individual is a determining factor in the assessment of risk.

In 2010 a Belgian Consumer Group challenged this article on the grounds that it conflicted with the principle of equal treatment of men and women under EU law. On March 1 2011 the ECJ delivered the ruling that different insurance premiums for men and women did in fact constitute sex discrimination. Given this, from 21st December 2012 it will be no longer valid to use gender as a rating factor.

Ger spoke briefly about the Equal Status Acts 2000 – 2008 (the Acts in Irish law that put the EU directives into effect). Collectively these Acts prohibit discrimination on certain grounds (including gender) but to date have allowed an exemption to the insurance industry.

Ger finished this section by bringing attention to the definition of indirect discrimination in the Acts and explained that insurers will need to be careful about this type of discrimination when gender can no longer be used as a rating factor.

General Insurance

After giving a background to the ECJ ruling Ger looked at the impact on General Insurance.

Current opinion is that the requirement to use gender-neutral pricing will apply only to new business and renewals from December 12 2012 i.e. it is unlikely that gender neutral rates will need to apply to existing in-force policies at this date.

Implications to consider for general insurers include:

- what rates to use for endorsements that are applied to existing policies after the end of 2012
- possibility of mid-term cancellations and anti-selection
- pricing will be a particularly difficult area

Ger pointed out that there is a fine line between using a proxy (eg. housewife as an occupation) and indirect discrimination.

Ger outlined that the ruling may now force insurers to look at other ways in which it can better determine the risk factors and protect itself from downside risk. For example, the introduction of advanced driver testing or the introduction of new questions on application forms.

Consideration was given to whether age could be the next factor that is deemed to be discriminatory.

Life Assurance

Dermot began with an overview of how pricing generally differs between males and females for the various types of life products available.

Dermot considered the impact on new business first. Gender-neutral rates will be required for new business written from December 21 2012.

Other impacts include the need for projections in pension quotations to use gender neutral annuity rates. For underwriting, insurers will need to ensure that they do not indirectly discriminate when considering other information provided (such as height, weight and medical conditions).

Other possible impacts for new business are:

- possible fire-sale because of cheaper rates for some customers prior to end of 2012
- rush of new business in 2013 when rates become cheaper for others

For corporate business it appears that gender can still be used as a rating factor.

The impact of the ruling on existing business is less clear. There may be different implications for business written prior to 2007 (when the EU Gender Directive was implemented in Ireland) and business written between 2007 and the end of 2012.

Particular considerations with regard to the use of gender-neutral rates for existing business are:

- the monthly benefit charge for existing unit-linked policies
- indexation increases on existing contracts
- surrender value formulae

Dermot finished by pointing out that gender is only one factor that insurers use to assess risk. Other countries already use gender neutral pricing and it is something that Irish Insurers will need to get used to.

Pensions

Keith began by explaining that the immediate impact on Pensions from the ECJ ruling is primarily as a consumer of insurance products i.e. annuities, disability and life benefits. There is no immediate requirement to change factors to be used in the calculation of commutation factors, transfer values etc.

The main consideration for Pensions is the difference between the use of gender-neutral rates for bulk and individual contracts. The legal position appears to be that bulk contracts can continue to use rates that differ by gender but individual contracts will need to use gender-neutral rates.

There is no immediate requirement to change such things as the Surrender Value basis or ASP PEN-12 but the Pensions Committee will need to bear in mind that these may need to be reviewed in the future in light of the ECJ ruling.

Q&A

A lively Q&A session followed the presentations. Consideration was given to the possibility of movement to off-shore insurers to avoid gender-neutral rating. It was felt that if this became an issue the EU would find a way to close it down on the basis that the ECJ ruling is a Common Good ruling.

Discretionary pricing in motor insurance came up as an area where insurers will need to be careful and will need to display that the use of discretion is not being used as a method of getting around gender-neutral pricing.

There was some discussion around the need for insurers to use new questions to better assess risk in the absence of being able to use gender as a rating factor and that the avoidance of indirect discrimination was very important.

Niamh Nolan

The CMI Mortality Projections Model

On Wednesday 30th March 2011, Gordon Sharp and Neil Robjohns delivered a presentation on the latest developments in the CMI Projection Model. Gordon was first to speak and provided some background and an overview to the model.

Background & Overview

Gordon began by discussing the Interim Cohort Projections (ICPs). These were published in 2002 (based on data up to 1999) and remain the prevalent bases for the pricing and reserving of pension business. The reasons for this include flexibility of use and a perception of 'common currency'.

However, evidence that has emerged subsequently has undermined the validity of these projections with the result that a CMI Working Party was established in 2008 to develop a model that was more robust, and at the same time retained the desirable features of the ICPs.

Gordon explained how the Working Party initially attempted various stochastic methods like the P-spline and the Lee-Carter. However, due to various shortcomings with these methods, the model ultimately chosen was a deterministic projection, using recently observed mortality improvement rates in the short term and blending to a long term convergence rate over time.

Gordon indicated that there was much discussion within the Working Party about how to blend mortality improvements between the short term and long term. He went through charts showing historical rates of improvement observed in different countries, as well as graphs showing the convergence from current improvement rates to a long term rate based on different sets of assumptions.

The new CMI model was introduced in November 2009 (based on data up to 2008). It was then updated in November 2010 to include an extra year's data. The model has both core and advanced versions, with the advanced giving the user more flexibility over parameter inputs, e.g. speed and pattern of convergence.

Details of the Model

Neil was next to speak, going through technical details of observed historical improvements, and then focusing on the parameterisation of the new model. He began by charting estimated historical rates of improvement, using both population data for England and Wales (from the Office of National Statistics) and assured lives data (from the CMI).

He noted the cohort effect that is observed in mortality data, and pointed out some interesting features in the population data (e.g., high male mortality at younger ages due to road deaths, and high mortality during certain periods that was likely due to AIDS). Neil highlighted that smaller datasets for assured lives data affect credibility and require smoothing. Because of this, the defaults for the model are based on population data.

Neil then looked at each of the model parameters in more detail. He reiterated that initial rates of improvement are informed by recent observed experience. For long term rates, there is no default value set, but possible sources of data to help set a value are, for example, national/international data and expert opinion. He also explained how convergence periods are based on qualitative research, and convergence path is broadly straight-line.

Model Updates and Robustness

Neil moved on to discuss the differences between the first and updated versions of the model. He noted that estimates for recent improvement rates increased once the data for 2009 was incorporated into the updated version. However, the revisions fell within an expected range, and showed that the methodology gives relatively stable results.

Neil next talked about the robustness of the model, highlighting how there was wide consultation about the model as well as disclosure of methodology, which was published and peer reviewed in both actuarial and statistical fields. He indicated the CMI's intention for the model structure to be updated roughly every 3-5 years, so as to strike a balance between responsiveness to new data and stability of structure. In addition, there will be limited annual updates to incorporate each successive year's population data.

Neil also talked about parameter sensitivity, and explained how changes in parameter values affect mortality improvements. He then compared the CMI model to the ICPs and stressed its superiority when comparing to observed experience.

Irish Mortality

Finally, Neil discussed observed Irish mortality experience. He pointed out broad similarities to the England & Wales data, but also highlighted some differences such as a more rapid pace of current mortality improvement, and how life expectancy of 65 year olds has evolved over time between the two populations.

Discussion

A lively Q&A session followed the presentation, with some interesting points raised, such as:

- how long term improvement rates have consistently exceeded expectations in the past, and may do so in the future, for instance due to advances in cancer treatments;
- the possibility and practicality of linking Normal Retirement Age to mortality improvements as predicted by mortality projections;
- the lack of consensus on the existence of the Cohort Effect outside the Irish & British actuarial professions, and how this effect may be based purely on interpretation of data rather than a true underlying feature of the data.

The podcast and a copy of the slides are available on the Society's website.

Rafay Khan

Risk Aggregation

On the 5th April 2011, the Society demonstrated its continued commitment to the developing area of Enterprise Risk Management by organising an evening presentation on the topic of Risk Aggregation.

The two speakers for the evening were Elliot Varnell, a Principal Advisor with KPMG UK and Curt Burmeister, a Director of Risk Solutions at Algorithmics Inc.

The meeting was well-attended by Society members from across the actuarial profession, including those from the insurance industry, consulting and regulatory backgrounds which is perhaps indicative of how important a thorough understanding of risk aggregation techniques has become in recent years. In particular, the application of dependency structures to combine risks within capital models (aggregation) and the subsequent use of robust methods to allocate capital requirements back to their underlying risk drivers (de-aggregation) are poised to be particularly important under Solvency II.

The main aim of the speakers' presentations was to introduce members in an accessible manner to the:

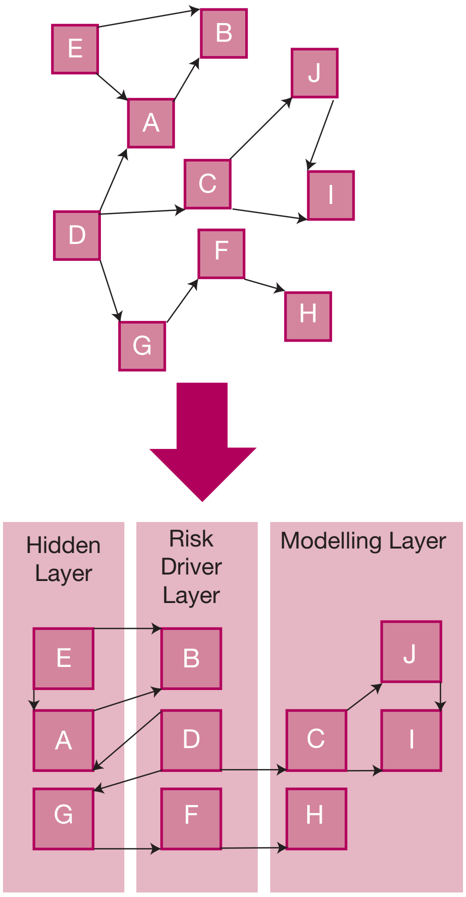
- Key ideas and theories used in risk aggregation – event causation, risk-drivers, dependency and correlation, non-linearity, positive semi-definite requirements.
- Various techniques in common use in modern risk aggregation and capital allocation – correlation matrices, implicit and explicit copulas, Euler, Triangle & Harrell-Davis allocation methodologies.
- Practical considerations and challenges – calibration in the absence of adequate data, incorporating expert judgement, governance of large correlation matrices, finding robust allocation methods, fungibility and tax restrictions.

Elliot opened the presentation by describing some of the key stakeholders in Risk Aggregation and their differing (and sometimes conflicting) interests in the process before going on to briefly cover the most common risks identified by QIS4 in the internal modelling of the European insurance industry.

Modelling Real World Interactions

In the real world, the occurrence of one event often leads to an increased/decreased probability of other events happening and quickly the modelling of the inter-relationships of a series of causal real-world events becomes very complex.

In response to real-world complexity, companies seek to simplify their models and in doing so some information is invariably lost to a hidden layer. However, the focus of companies is on identifying the key risk factors considered to be the most material/quantifiable; known as the risk-driver layer. Any subsequent (dependent) events that are caused by the risk drivers can be captured in a modelling layer.



Elliot explained how the individual risk drivers become the fundamental building blocks of a model and are modelled by marginal distributions calibrated from historical data and expert judgement. Similarly, when we consider pairs of risk drivers, there will be joint (bi-variate) distributions which are calibrated in the same manner.

Copulas

Mathematically, joint distributions can be broken down into their component parts. For example, a bi-variate distribution can be separated into 2 marginal distributions and a copula function which represents the dependency structure between the two risk factors.

The advantages and disadvantages of the various different types of copula functions available were then discussed:

- Implicit copulas – *e.g. Gaussian & t-copulas, most commonly used, more tractable in higher dimensions.*
- Explicit copulas – e.*g. Gumbel & Clayton copulas, can handle tail dependency, challenging i*n higher dimensions.
- Empirical copulas – *copulas derived from an empirical data distribution, hence can be very flexible but not tractable.*

Practical Aggregation

Elliot presented a worked risk aggregation example combining sample capital stress-test results using a 3x3 correlation matrix using simple matrix algebra. It was explained that a Gaussian copula is implicitly assumed when using such a correlation-matrix approach and that the capital requirements are also assumed to vary linearly with each risk type.

The calculated capital requirement in the example was less than the sum of the individual requirements which implied a diversification benefit was achieved. This was as expected as the risks were not assumed to be perfectly positively correlated in the correlation matrix (i.e. $p< 1$).

Some of the practical issues involved in using a matrix approach were then covered, such as:

- Difficulties populating large matrices with unusual risk factors pairings - e.g. lapse risk in Germany versus US equity risk.
- Maintaining good governance at group and business unit level of correlation matrices.
- Ensuring a correlation matrix has the appropriate mathematical properties (i.e. is Positive Semi-Definite).
- Balancing the tractability of copulas against the flexibility to handle non-linearity/tail dependency.

Elliot added that for more complex dependencies, a copula function is typically more appropriate but for simple dependency, a correlation matrix can often suffice.

Overview of Aggregation/ De-aggregation Process

Elliot concluded the first part of the presentation by suggesting a useful process diagram for the key steps involved in an end-to-end aggregation process.

1. Identify the most relevant risk drivers for the business.
2. Fit individual loss-distributions using historical data & expert judgement.
3. Combine to form multi-variate distributions using dependency (copula) structures.
4. Generate a large number of scenarios from these distributions.
5. Calculate the net asset value position for each of these scenarios.
6. Order the net asset value scenarios to determine a capital requirement (e.g. SCR).
7. De-aggregate of SCR to its constituent drivers using allocation techniques

At this point, Curt took over and continued on from the earlier topics covered by providing greater detail on various capital allocation techniques in use by his company's clients.

The 3 main approaches to capital allocation covered by Curt included:

1. Quantile attribution method - upper empirical cumulative distribution function value (i.e. the 99.5th Percentile).
2. Smoothed value methods – using an L-estimator such as Harrell-Davis (HD), Triangle or Guassian weights.
3. Biting scenario method – use an L-estimator to smooth the risk factors to create a new scenario.

Case Study: Capital Aggregation and Allocation

In order to introduce these methods further, Curt presented an illustrative case study where results from the various methods were compared and explained in detail. The case study had the following features: -

- Reporting hierarchy with four product lines and various aggregation levels
- Aggregation rules applied to Net Asset Value (NAV)
- Attribution rules applied to NAV
- Limits applied to transferable capital up the hierarchy
- 10,000 Monte Carlo simulations

The sample hierarchy presented by Curt applied some illustrative numbers to these methods but it also considered the practical issues arising from a real-world risk aggregation and allocation exercise by companies e.g. capital fungibility rules, caps on profit transfers, percentage ownership of subsidiary, tax considerations, etc. The fungibility considerations were handled mainly through the calculation of a Transferable Net Asset Value (TNAV) by applying the aggregation rules to the NAV from each scenario.

Curt believed that that one of the key advantages of using HD weights to smooth SCR values or using HD weights to smooth the risk factors for the biting-scenario method was that both approaches offered an additive allocation of capital from parent to child nodes within a hierarchy; a desirable feature. However, he stated that the biting-scenario method was more computationally intensive to perform in practice.

Curt stated that a lot of the companies that his company were working with were occupied with implementing one of these methods to obtain an additive allocation of capital while also embedding the capital fungibility requirements of their business.

This concluded the presentation and a thought-provoking Q&A session followed which provided ample opportunity for the members in attendance to quiz both the speakers further on their practical experiences of risk aggregation and capital allocation.

For those members who were unable to attend and would like to know more about this topic, there is a full podcast and a copy of the speakers' slides available on the Society's website.

Ken Deane

An Actuary in Cameroon

What use could an actuary be in a remote and very underdeveloped part of Africa where most of the natives are illiterate and are living on less than $1 a day? The answer (hopefully) is "not entirely useless"!

Maga

I went to Maga in the Far North of Cameroon in March 2008 as a VSO (Voluntary Services Overseas) volunteer. My brief was to develop the local council so that it could take on new development responsibilities devolved from central government. I found that Maga had almost no infrastructure, with no surfaced roads, schools with average class sizes of 150 and no desks, medical centres which would multiply your ailments were you to become ill and very inadequate access to safe drinking water. Its local council had 30 staff, only one of whom had finished school and many of whom had not even finished primary school. Despite, or perhaps because of these deficiencies I found that opportunities to add value abounded although what still remains to be done following my return home in March 2011 is appreciable. A post entitled "Taking Stock" in my blog (see below) summarises what was achieved.

In my first year in Maga I worked through the rainy season from June to September but I found this to be horrific as flood waters contained human and animal excrement, fertilisers, weedkillers, general waste and snakes and other unpleasant creatures. Water-borne diseases such as typhoid and bilharzia proliferated and malaria-bearing mosquitoes were everywhere. There was no electricity for three weeks out of four and the privileged few (including myself) who had piped water were without it because the pumps were electric. In the two years which followed I skipped the rainy season by coming back to Ireland with its heavenly summers (I am not being sarcastic – even in the dry season in Maga the temperature frequently goes above 45C and sometimes over 50C). I was very fortunate to do this in 2010 in particular since the rainy season turned out to be the worst for a very long time. There were widespread floods, crops were devastated, 5,000 people were left homeless and 14 people died in one storm alone. In addition to the water-borne diseases and malaria, there was a serious outbreak of cholera.

Project Uisce Beatha

In my time in Maga I had become aware that many people drank water of very poor quality, were frequently ill and in some cases died as a result. The only source of clean water for most people is from a "forage", a deep enclosed well (over 50 metres in some cases) with a manual pump whose source water is clean and is not contaminated by flood waters or animals or malicious children. Maga has less than half the number of forages needed to serve its population and the pumps in a large number of them are not working. Before returning home I initiated a project (Project Uisce Beatha, PUB for short) to repair the forages and I persuaded the local council to take on-going responsibility for repairing the pumps which break down in the future.

Pump Maintenance Scheme

Throughout Cameroon efforts to set up structures for forage maintenance have centred on village management committees who collect fees for drawing water which they use to pay for repairs. These have been beset by problems. Even where the management committee does collect fees and its treasurer does not spend the money on himself, when a pump breaks down there frequently is not enough money to pay for repairs. In the case of serious breakdowns it would take a number of further years to collect the required funds and usually where this happens the forage is abandoned. The situation is analogous to health insurance and I proposed that all the management committees make contributions to a central fund administered by the council which could then be used to repair the forages where problems arise. To the best of my knowledge this is the first time that an insurance type approach has been used in Cameroon. With a central fund administered by the council it is also easier to put controls in place to ensure that the money is not syphoned off for personal gain or that the technician entrusted with repairs does not make off with the money.

I have had to advise the council on the level of monthly contribution needed from each management committee to fund the purchase of replacement parts and labour and other costs of the scheme (I hope this was OK in the absence of a practising certificate!). One would expect the probability that a pump will break and the likely cost of the replacement parts to be related to the type of pump, its age and perhaps other factors such as depth.
I could find no useful historic information to assess such probabilities and had to make do with a very crude rating system based only on type of pump. In order to estimate the cost of repairing the pumps which are currently broken I commissioned a study of all 149 pumps detailing their type, what parts need to be replaced and their cost. Reliable information was not available on how long ago the pumps broke down (most villagers have no concept of time but will always give answers to questions even when they really do not know). Based on discussions with technicians I had to make assumptions for each type of pump about the average duration since the pumps broke down and then use this to estimate the average cost of replacement parts per annum. I considered recommending the same rate of contribution for all types of pump but the variations were such that this would lead to instability. In designing the rules of the scheme I felt it necessary to align the interests of the management committees and the population served by their forage with the interests of the scheme. Somewhat like the practice with salary protection insurance where false claims are reduced if the policyholder suffers some shortfall on normal salary when claiming benefit, in order to motivate good management of the pumps I insisted that the management committee suffer part of the cost when a pump is repaired. I could think of no way to ensure the solvency of the common fund other than to pitch the contributions on the high side and give the fund a good start by separately repairing the pumps that are currently defective.

Information on the project to repair the pumps is given in my blog. The cost of Project Uisce Beatha is €42,000 and I expect that it will materially benefit the health of over 40,000 people, including saving some lives, particularly of children who are the most vulnerable to water-borne diseases and cholera. As many pumps as possible need to be repaired before the onset of the next rainy season in June. I abandoned my actuarial discipline in committing to this project without yet knowing how I will fund it.
If anybody is prepared to help me with this I suggest you read my blog and then contact me.

Tom Collins

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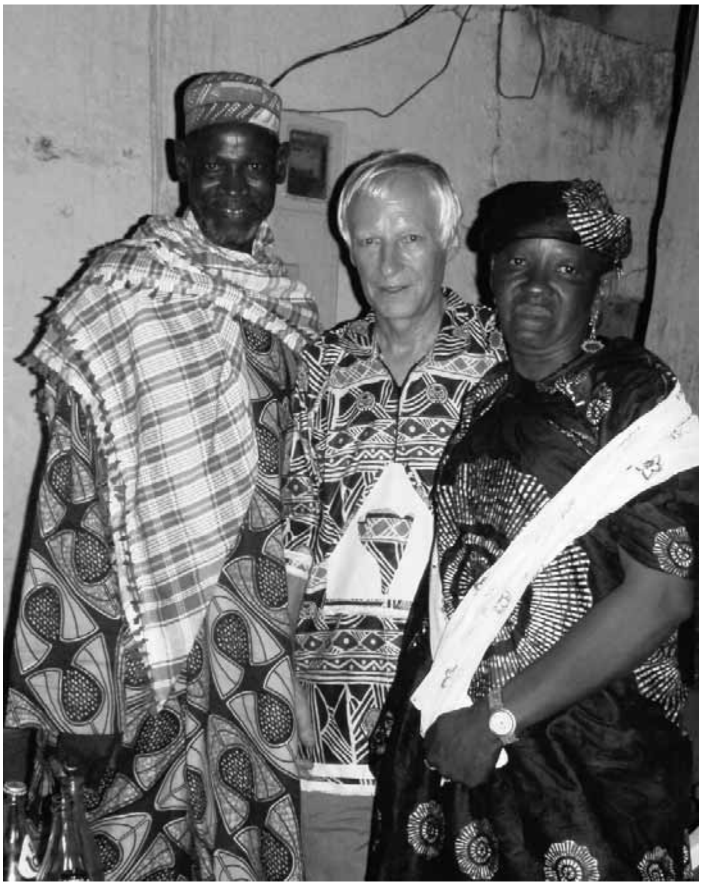
Email: om.collins5@mail.dcu.ie
Mobile: 086 2752000

Tom on his way to the office

A "forage" with a foot-operated pump

Tom with his boss, the Mayor of Maga,
under the watchful eye of Paul Biya,
President of Cameroon for the past 27 years



Tom with the Mayor of Maga and one of his four wives

Update from the Communications Committee

It's all in the communication

Perhaps it is because actuaries have traditionally had an uneasy relationship with communications and/or the timing coincided with the introduction of the new CA3 Communications exam but the Communications Committee was set up in September 2009 by the Society in recognition of the importance of effective communication with members. Since commencement, the Committee has met once a month in the Society's offices on Pembroke Road taking a 2 month break during the summer months. The key purpose of the Communications Committee is to:

- Increase the level of engagement of members; and
- Add value to members, through relevant and appropriate internal communications, forums and networking opportunities.

Also included within the scope of the Committee are:

- Internal communications and engagement with members (including style and format guidelines),
- Cross communications between the SAI Committees,
- Liaising with the PR Committee to ensure matters of importance are communicated internally before being made external,
- Be a sounding board for, liaise with and receive reports/updates from the SAI Website Sub-Committee,
- Be a sounding board for, liaise with and receive reports/updates from the Newsletter Team.

During the last year, a lot of work has gone into analysing the various ways that the Society communicates with its members and into ways that we can improve on these. To aid us in our understanding of this, the Committee designed and issued two online surveys (one for fellows and one for students) in order to gauge what members think of the Society of Actuaries and how it communicates with its members. There was a very good response rate to the surveys (thanks to all those who participated) and results were analysed by the Committee (results of both surveys were subsequently published in newsletters). The results from the surveys formed the basis for a significant portion of the work that has been undertaken and is currently underway by the Committee. The following sets out the type of work done by the Committee and its remit:

- The Society website is probably the most important way that the Society communicates with its members. It is a vast repository of information for members. Within the last year, the website has been upgraded and indeed the Society is constantly improving it. Part of the Communications Committee's task is to ensure that the website is easily navigable and that members can make the best use of this valuable resource. With this in mind, we are conducting a review of the website to ensure that it is best in class and one can access material in as user friendly and intuitive way as possible. In order to do this we are conducting reviews of similar peer websites and we also liaise closely with the Website Sub-committee to ensure that our objectives are in line (indeed the chair of the Website Sub-committee sits on the Communications Committee).
- The Committee has initiated a process to enable it to review many of the statistics obtainable from the Society's website so as to examine which sites generate the most readership and how these sites are accessed with the aim of getting a better understanding of how people use the site and thus leading, we hope, to future improvements and enhancements.
- The Society now provides podcasts of all its meetings, providing more flexibility for its members to gain CPD. We also continue to look at other potential enhancements weighing up their cost versus their effectiveness.
- From analysing the surveys, it became obvious that members were interested to hear more about the work of the practice areas and of what is currently topical. In response to this, we asked the various practice areas to briefly describe their work they are doing and provide an update to members on same. A practice area committee update was published in the May newsletter last year and has now become a regular feature of the newsletter.
- The newsletter itself is one of the main ways that the Society communicates with its members. One of the criticisms of the newsletter has been that there tends to be an over reliance on reviews of Society meetings. In order to address this, the Committee intends to diversify away from these reviews and, in particular, to focus on ways to make our communications more relevant and engaging. One of the proposals is to introduce more opinion pieces and also interviews with eminent members of the profession (be careful – we might come looking for you!).
- The discussion forum on the Society website was identified as a much under-used facility of the website. It was one of the first priorities of the Committee to investigate how this could be addressed. There were many proposals made, from opening up the boards of the individual practice committee areas to general viewership, having one username and password for the Society website and the discussion forum, etc. Unfortunately, most of the proposals have resulted road blocks for a variety of reasons. Practice areas wish to have a restricted forum in order to share communications which is reasonable in the context of the sometimes sensitive nature of various communications and, due to multiple IT platforms in use between the website and discussion forum, it is not possible to have a common username and password. However, we continue to look for ways in which we can utilise this feature to its maximum and, in fact, we have found that it has been very successful in being a communications hub on Solvency II issues.
- From the results of the student survey, it is clear that students do not use the Society as much as qualifieds chiefly due to their exam focus where the Institute and Faculty website will continue to be their main source of exam related material. Nevertheless, it is an objective of the Communications Committee to engage more with the student membership. With this in mind, we have added a student page to the Society's website, we will endeavour to have more meetings geared towards the needs of students and the Society will continue to host student events.

As you can see, there is lots of work underway to ensure that you continue to be well informed. If you have any ideas that you believe would further enhance the way the Society communicates with its members please put them in an e-mail to mary.butler@actuaries.ie.

The members of the Communications Committee are Ciara Regan (chair), Frances Kehoe, Mary Butler, John Feely, Dave Roberts, Eoghan Burns, Ben Deans, Olan Mooney, Edel O'Connell and Michael Sharpe.

Michael Sharpe

The Society launches a Student Section on its website www.actuaries.ie

Olan Mooney, a member of the Society's Communications Committee, is interviewed on the development of the Society's website and in particular on the new Student Section

What has been the response to the re-designed society website?

The response has been hugely positive. The website is one of the most important resources available to actuaries in Ireland and as such, it's important that members are comfortable using it and that it contains sufficient detail to meet their professional requirements.

We've taken the feedback provided to us by members and re-designed the website to ensure that it is clear and easy to navigate. The inclusion of the Professional Interest Areas section means that it is now easier than ever for members to locate information relevant to their particular practice areas.

What was the motivation for the launch of the student section?

The Society's website was established with the intention of servicing the needs of all our members, be they qualified or students. However, in our last Communications survey, we identified that the website was only being accessed regularly by about 50% of our student members. The primary reason for this was that students felt the website was more useful for qualified members of the Society and didn't really address their needs.

To redress this, it was decided that the website should be updated to include a section specifically relating to student members.

How do you access the student section of the website?

The student section can be accessed directly at https://web.actuaries.ie/students Alternatively, you can log on to the Society of Actuaries Ireland homepage at www.actuaries.ie. Here, you will see a number of sections identified across the top of the page, including one for 'Students'. Clicking on this will also bring you to the student section homepage.

What is on the new student section?

The student section was designed to be useful for both those who are interested in pursuing an actuarial career as well as those currently studying for actuarial exams.

Therefore, the section contains general information relating to becoming an actuary including details of the type of work actuaries do, actuarial courses offered by third level institutions in Ireland, the structure of the actuarial exams etc. It also includes informal interviews with actuaries working in various areas of the market, providing an insight into their working lives.

For current students, the website provides links to relevant sections of the Institute and Faculty of Actuaries website and the ActEd website. It also provides updates from the Student Consultative Forum, details of Student Society events and articles relating to useful study techniques and exam preparation.

Who should students contact if they wish to provide feedback on the student section of the website?

As always, comments, feedback and suggestions are welcome so feel free to drop us an email at info@actuaries.ie.

Summer BBQ

Thursday 21st July – D2, Harcourt Street

Now that the summer is here, the Student Society has turned its thoughts to the summer BBQ.
Enjoy char-grilled food and refreshments together with your actuarial colleagues.
You can look forward to some further surprises on the night.
This year, we are inviting recent qualifiers to join us for our BBQ.

Check out the Society website for further details closer to the date.

SAI Life

The 2011 Life Reinsurance Forum held on the 3rd of March, started off with an update on Committee activity and developments in the industry from Chairman Mike Frazer. Among the topics covered was the standard of Life Re Actuarial Reports; the Regulator's letter to SAI President, Kevin Murphy in early 2010 included some comments on Life Re regarding the quantification of uncertainty which was often omitted from reports. In general, it was felt that the 2008 Actuarial Reports were not comprehensive enough. The standard of actuarial reports will be reviewed again in light of further experience. Another topic covered was the role of the Signing Actuary for VA companies and new VA requirements. Here it was noted that all companies, regardless of whether they are VA writers or not, have to declare if they do or do not write VA business. Other topics covered were the recent ECJ ruling on the Gender Directive, the impact of Sovereign default probability on discount rates, changes to the securitisation regime taxation in this current year, CBI – CP 49 – "Consultation on Impact Metrics for Risk Based Supervision" and the implementation of the Corporate Governance Code.

Longevity Risk Management and Solutions

The Life Reinsurance Forum welcomed guest speaker Gavin Jones, Senior Longevity Actuary at Swiss Re, to give a talk on longevity risk. Gavin's wide range of experience in the UK, the most active longevity risk market, was evident from the nature and detail of his presentation which was extremely well received by the audience.

Gavin kicked off the presentation by looking at male life expectancies across the world and Irish male mortality improvements specifically. He noted that the risk is systematic in nature and is quite slow moving. As with a lot of actuarial projections the main risk here is the model risk.

Gavin then took the Forum through the longevity risk market in the UK where there is finite capacity for longevity risks and a disproportionate demand to meet this capacity. There is GBP 1.4trillion in UK corporate pensions liabilities; less than 1% of this is insured. According to Gavin, there is insufficient capacity in the insurance market to absorb the future demand for longevity risk transfer from UK pension plans.

A longevity swap consists of the insurer covering the cost for a pension plan if longevity increases and gaining if the opposite occurs. In a longevity swap the liability risk only is transferred.

There are complexities surrounding the cost of longevity insurance. Usually a margin for prudence is allowed for which gives rise to what is called the 'catch-up' premium over and above the insurance premium for the actual cost. Insurance premium is driven by the cost of the incremental capital the insurer needs to hold the risk. For an insurer the pricing will reflect diversification benefits from holding other types of risks e.g. mortality, benefits from business line diversification and perhaps some benefits depending on the insurer's consolidation ability.

Gavin then drew the audiences' attention to 4 large longevity swap transactions that had occurred in the UK market. In 3 out of the 4 cases, the longevity risks ended up with the reinsurers through the banks. In the other case, the risk was written directly to a reinsurer. At the moment, capital is available to finance more of these transactions; however, the question everyone wanted to know was, for how long?

Longevity Risk Management and Solutions – Panel Discussion

Following on from Gavin's presentation a panel discussion surrounding longevity risks ensued. This was chaired by Carlo Elsinghorst from Eureko Re, a member of the Life Reinsurance Sub-Committee. The panel consisted of Gavin Jones, Swiss Re; Padraic O'Malley, Milliman; Kevin O'Regan, Partner Re and Derek Popkes, Canada Life International Re.
The following 3 topics were discussed.

1. ***Are we letting the banks eat our lunch?***

   The banks, in 3 out of the 4 cases presented by Gavin Jones, are the middle man between the original cedant and the reinsurers – the question was raised to the panel as to the extent that the banks gain value from these transactions.

   It was discussed that these banks are the ones that facilitate the transactions and make the job easier for the reinsurers. However, from the discussion that followed it seems that the rewards from these transactions are not being divided appropriately.

2. ***Irish mortality improvement has peaked.***

   Gavin Jones made the point that what has happened in the past is not necessarily a good indicator of what will happen in the future due to the fact that unforeseen external events such as medical improvements and/or developments have a huge effect on mortality improvement and these are not easily derived from past experience.

   It was also noted that in other markets, rates of improvement tend to change. They reach peaks at different stages and can vary widely depending on factors such as smoker status and occupation. In the pricing of longevity risks actuaries tend to include a trending off/slowing down of improvements.

3. ***Ireland is too small for longevity swaps.***

   With Ireland being a smaller market, this means that the risk of error is greater due to the fact that if experience data is used it is being taken from a smaller pool of experience.

   In Ireland there are 7 or 8 schemes with approximately 2000 lives, according to a survey carried out last year. This scale of market activity would make such transactions possible.

   Gavin Jones noted that in the UK, if a scheme has less than 2000 lives, one starts to rely on socio-demographic data. Perhaps Ireland is just breaking through to a size where it would be possible to participate in these types of transactions.

The Central Bank of Ireland on Life Reinsurance

Tony Jeffrey from the CBI presented a short presentation on Life Reinsurance issues.

Tony thanked everyone for a great response on the QIS 5 submissions and spoke on the timeline to the publication of results. He also spoke about the changes to the Life Reinsurance Technical Reserves guidelines that have yet to go through a full internal formalised review within the CBI. His last topic was on the SAO reports and how they should be improved. The main items that should be detailed within these is a description of the business; details on the assumptions - which ones are key, what the key risks are; experience data – this should put the assumptions into context; a demonstration

Reinsurance Forum

of the consideration of all issues in both ASP LA-11 and ASP LA-12 and an assessment of the level of prudence using appropriate means such as stress testing. Tony also noted that Life Reinsurance standards have improved.

Solvency II Briefing

The last topic of the forum was a SII briefing introduced by James Maher. Various members of the Life Reinsurance Sub-Committee participated in this panel discussion.

Omnibus II & Level 3 Pre Consultation – Colin Murray

Colin spoke to the group about SII which was published on 19th January 2011 and whose main provisions included the implementation date of 1/1/2013, transitional measures and the creation of EIOPA which replaces CEIOPS.

Level 3 guidance was issued in the pre-consultation process in December 2010 with draft guidelines issued on many topics. It was noted that there was a lot of repetition in the level 2 guidelines; moreover, the level of detail provided was less than expected.

Jurisdiction, Corporate Structure and Equivalence – Brian Morrisey

Brian spoke about the changes that have been happening in the market with regards to groups re-domiciling, creating sub-holding structures and EU bases. He also spoke about major trends in global reinsurance. The problems and solutions are different for different companies with different geographic footprints.

The overall factors in choosing a location are capital management/regulation – there is a risk of increases to the cost of capital under SII especially if internal model approval is not granted. Also fiscal/tax factors – Ireland has a low effective tax rate, the use of reinsurance here is an obvious tax planning tool. Finally, Operational Efficiency – some companies have hubs and centres of excellence located where it will be operationally more efficient to have them and where the economic strength of the country is a large factor.

Pricing for SII Capital – Mike Claffey

Mike spoke at the Forum about current practice and where things are changing. With the introduction of internal models the pricing for capital will change. However, internal models require resources for development, approval etc. The need to use the internal model for pricing is heightened by the fact that EU companies must pass the Use Test to gain internal model approval. For pricing there are issues for new treaties and how one should rebase capital – across the Group, within the company or assume treaty standalone pricing? There are similar issues for the question of diversification and how it should be applied. There are also technical issues with the projection of SCR and rebasing it across the expected life of a treaty. This can get extremely difficult if stochastic mortality models are required.

With the introduction of SII there should be opportunities for reinsurers. However, existing regulatory capital arbitrage opportunities may be reduced. Collateral may become more important which has implications on the cost of capital in an uncertain environment.

Mike ended his part of the briefing with a brief update on the recent Gender Directive regarding unisex premiums across Europe from which reinsurers are excluded and some of the problems that may arise from this e.g. reserving on unisex tables, requesting gender information, the problems for underwriting, what (if any) are the transition details and what policies are in scope.

Panel Discussion & Questions from the Floor

Following on from the presentations from the panel there was a lively discussion chaired by James Maher where members of the audience were able to ask panel members questions on their presentations.

For more information the podcast from the Forum and the presentation slides can be found on the Society's website.

Elena McIlroy de la Rosa

The Irish Industry

Introduction

On Monday 11th April 2011, Graham Cherry (Central Bank or Ireland) gave a presentation on "Irish Industry Submissions for QIS5". The purpose of the presentation was to give a summary of the results emanating from Irish QIS5 submissions and some comparisons with the results across Europe.

Graham opened the session by outlining the primary objectives of QIS5:

- To provide another test of the system being developed for Solvency II;
- To achieve a high level of participation from both solo undertakings and groups, with a particular emphasis on smaller undertakings participating than had been the case in previous studies;
- To increase the level of preparedness of both industry and supervisors;
- To use the QIS5 results to calibrate the Level 2 Implementing Measures; and
- To use the QIS5 results to assess the needs and contents of the Level 3 guidance relating to Pillar 1 requirements.

The Central Bank of Ireland received 220 submissions for QIS5 (which equated to 81% of entities that will be subject to Solvency II). This compared favourably with the participation rate across Europe of 68%. Graham suggested that while there were a number of areas that required further clarification/revision, the quality of the submissions received by the Central Bank of Ireland was relatively good. The presentation was split into a number of sections, each of which are detailed below.

Valuation of Assets and Other Liabilities

Limited feedback was received on the methods proposed. This is likely due to such methods being similar to what is in use locally already.

On the issue of deferred taxes, further guidance was requested on how this should be calculated and what particular requirements meant.

Technical Provisions

In general, there was a reduction in the level of technical provisions for both life and non-life companies from Solvency I to QIS5. The reduction was larger for non-life companies.

The main reasons for changes in the level of technical provisions under QIS5 to those applicable under Solvency I were as follows (applicability of each is dependent on whether the business is life direct/reinsurance, non-life direct/reinsurance):

- Best estimate instead of prudent
- Inclusion of a risk margin
- Discounting allowed (for non-life business)
- Discounting using risk-free rates instead of rates that might include some element of risk premium
- Removal of surrender value floor
- Different set of cashflows included in the calculations of the provisions due to contract boundaries under QIS5

Risk Margin:

The main comments received in this section were that the calculation of the risk margin was far too complex. Both in Ireland and across Europe it was common to use one of the simplifications, and that due to the complexity of the calculations, simplifications would always be required. Companies also commented that unavoidable market risk was too difficult to define.

Contract Boundaries:

Many companies thought the definition of contract boundaries was unclear. An issue for many companies with unit-linked business was that a lot of contracts were deemed to have a zero boundary. Other comments mentioned a lack of consistency in the treatment of some regular and single premium contracts.

The overwhelming view was that the QIS5 definition was out of line with IFRS/IASB guidelines and was uneconomic, inconsistent with the risk profile of the contract and unrealistic. A wide variety of interpretations were used across Europe.

Segmentation:

For non-life business, several companies felt that the segmentation was too broad and that too much business was ending up in the miscellaneous category for non-life business which attracted a higher SCR charge.

Some non-life companies also complained that the split of motor business between property and liability did not match practice in the Irish market (which is to have one contract covering both risks).

Life companies felt that the second level of segmentation was too detailed and led to unnecessary complication.

Own Funds

In Ireland, the majority of Own Funds were deemed to be Tier 1. Across Europe, the proportion of Tier 1 assets was slightly lower. The figure for groups was substantially lower reflecting the fact that most capital raising is done at a group level.

Many comments were received on Expected Profits in Future Premiums ("EPIFP"). Most companies agreed with the inclusion of EPIFP in Tier 1, but many felt the calculation was too complex and unnecessary if EPIFP is to be included in Tier 1.

The majority of companies reported zero EPIFP. It should also be noted that the size of the EPIFP is directly linked to the definition of the Contract Boundaries.

Standard Capital Requirement ("SCR")

Most companies saw an increase in the SCR over the Required Minimum Solvency Margin ("RMSM") under Solvency I. The increase was generally greater for non-life companies than for life companies. Graham compared the Irish results to the EEA results and then further broke down the analysis by life/non-life business.

The composition of the SCR differed dramatically between the Irish submissions and the EEA submissions. For both life and non-life companies, the relative size of the market risk component of the SCR was significantly less for Irish companies than their EEA peers. It was also notable that the relative size of the life and non-life underwriting risk components of the SCR for the Irish submissions was significantly higher than their EEA peers.

Submissions for QIS5

Many comments were received in relation to the SCR. A selection of these comments are summarised here. All comments received were submitted to EIOPA.

Market Risk Comments:

- Problems looking through to the underlying assets for unit funds;
- Further work required to assess basis risk;
- For unit linked business, it was too complicated to do full calculations for each market risk shock.

Life Underwriting Risk Comments:

- Assessing the lapse risk at policy level was difficult and not intuitive;
- Mass lapse rates were too high;
- Longevity risk should be an improving mortality trend rather than a once off improvement.

Non-Life Underwriting Risk Comments:

- CAT Risk Method 1 was considered too complex;
- CAT Risk Method 2 was considered overly penal;
- Data requirements too onerous;
- Premium and Reserve risk was over calibrated.

Counterparty Default Comments:

- Most comments related to the complexity of the calculation, in particular to the calculation of the risk mitigating effect within the Loss Given Default;
- Complexity of the formula meant it was difficult to sense-check and/or explain results to management;
- Type 2 default rates were too penal.

Minimum Capital Requirement ("MCR")

The MCR generated few comments though some companies did comment that it was not risk-based. Approximately 5% of companies failed to meet the MCR.

Internal Models

Graham commented that QIS5 occurred early on in the Internal Models Process given that no internal models have been approved to date. Because of this it was difficult to draw meaningful conclusions about quantitative results. There were, however, plenty of qualitative comments:

- Models vary in design from each other and from the format of standard formula. This makes comparisons difficult.
- Of the Irish companies which gave internal model results, the majority used a group model and many already use internal models for a variety of purposes (UK ICAS, economic capital, etc.).
- The majority of companies felt that their models required further refinement to meet Solvency II requirements.
- Expert judgement was widely used when calibrating the models.
- All companies used the 99.5% 1 year VaR measure.

A wide variety of reasons were cited by companies as to why they felt an internal model would be more appropriate than standard formula for their business. Some of the reasons given were that the standard formula made no allowance for equity volatility risk or interest rate volatility risk, or that the internal model had significantly more risk factors than the standard formula.

Overall Financial Impact

Most companies saw an increase in Own Funds due to lower technical provisions. Offsetting this, most companies saw an increase in required capital. The overall impact on companies depended on the balance between these two items. More companies saw a reduction in surplus capital under QIS5 than saw an increase, and of those companies that did see an increase, the majority write life business. When comparing SCR coverage between the Irish and EEA submissions, the proportion of companies with less than 75% coverage was significantly higher in Ireland compared with the EEA, although it was noted that this varied significantly by country. There was, however, a large difference in Irish submissions with a much higher proportion of non-life companies having less than 75% SCR coverage.

The podcast and a copy of the slides for this presentation are available on the Society's website.

Cian O'Muircheartaigh

SAI Practice Committee Updates

The Practice Committees have briefly outlined below their main areas of focus at present.
The minutes of each of the Practice Committee meetings are readily available on the website and provide further more in-depth details of discussions and actions arising.

Please note that the following is merely a brief summary of the activities of the committees:

Enterprise Risk Management (ERM)

- The committee is continuing its series of evening meetings based on the ST9 syllabus. Elliot Varnell and Curt Burmeister presented "Risk Aggregation" on 5th April.
- Neil Cantle is due to present on "Complexity of Risk" on 27th June. The Institute of Actuaries announced funding last year for several enterprise risk management research projects. Neil will provide an update on one project looking at new approaches to risk appetite and emerging risks.
- A working party of the committee published a paper "Constructing a Risk Appetite Framework – an Introduction" and an evening meeting with an expert panel is scheduled to discuss various aspects and challenges in constructing a risk appetite. It is hoped that this event will be of particular interest to those involved in working towards compliance with the specific risk appetite requirements of the recently published "Corporate Governance Code for Credit Institutions and Insurance Undertakings" of the Central Bank of Ireland.
- The committee is compiling a list of actuaries with responsibility for risk management within their organisations and would be interested in hearing from any such actuaries.
- The committee is planning to contribute to a working party on the "Discussion paper on Economic Scenario Generators" published by the Central Bank of Ireland and would appreciate volunteers or views on the subject.

Finance and Investment Committee

- Most recent evening meeting was on May 17th 2011. The meeting titled "Quantitative Easing – What is it, and what are the implications for actuaries?" was presented by Colm Fitzgerald.
- Other evening meetings in the pipeline at present include: (i) "Insurance versus Banks during downturn", (ii) Risk Management for DC and (iii) Investment Strategies.
- The launch of Finance & Investment Professional Interest Area on the Society's website took place in March.
- Gordon Kearney (State Street Ireland) will join the Finance and Investment committee in June.

General Insurance Committee

The General Insurance Committee last met on 28th April. At this meeting we discussed a number of current issues, and our plans for the year. Current issues under discussion included

1. EU Gender – tracking developments
2. Insurance Compensation Fund – implications for Irish policyholders of possible future events
3. Letters from the CBI on uncertainty and reserve adequacy.

We considered given the emphasis on uncertainty lately, that this may merit a general insurance practice note for the next year-end. We will discuss this further at future meetings.

In addition to the above, we aim to monitor the outputs of the various SII committees, and feedback where appropriate. We also in particular will act as a feedback mechanism, if appropriate, for gathering views for the next QIS (albeit not full exercise).

We intend to have a final meeting of the Committee before the summer break in June.

International Committee

- Groupe Consultatif issues
  - Strategic development of Groupe continues.
  - Solvency II implementation continues to be main focus.
  - Actuarial Standards Project Team established.
  - Updated Mutual Recognition Agreement was signed.
  - Chris Daykin, chairman of Groupe Consultatif, met with members of the Society in February to provide an update on Groupe workings.
  - Next meeting of Committees will be in October in Prague.
- International Actuarial Association issues
  - Council met in Sydney in April.
  - Continued work on CERA treaty. 3 Associations (SAO (US), IFA(UK) and IAA (Australia)) certified to grant CERA.

Pensions Committee

(An update from the Pensions Committee is provided on Page 5 of this Newsletter).

Solvency II Committee

- An evening meeting was held in April on the results of QIS 5, in conjunction with the Central Bank. There are a number of society meetings in May and June with a Solvency II focus, including:
  - Solvency II for beginners
  - Solvency II internal models
  - Pillar III under Solvency II.
- The committee continues to provide input to the Groupe Consultatitf in advance of their meetings with EOIPA.
- The committee is represented on the Groupe Consultatif Standards Project Team which is considering the development of Solvency II related actuarial standards. The committee would welcome views on what topics might usefully be covered by actuarial standards under Solvency II.
- Input to the Society's three year plan has been provided in the context of the role and potential roles for actuaries under Solvency II.
- Rotas have been prepared for the review of level 3 guidance, pending its publication.

Note: Minutes of the Practice Committees are available on the Society's website:
https://www.actuaries.ie/professional-interest
(member login is required)

Obituaries

Gerry O'Carroll

Gerry O'Carroll died on 4th April. He had courageously fought brain tumours for the previous fourteen months with the great support of family and friends. He was only 58 and had been retired from full time working for less than two years.

Like so many of us at the time, Gerry served his actuarial apprenticeship with Irish Life after completing an honours degree in mathematics at UCD. I came to know him well when he joined R. Watson & Sons in 1980. The Firm was then in its infancy in Ireland and he played an integral part in its subsequent growth and development. He spent the rest of his full time actuarial career with the Firm. He qualified as an FIA in 1984 and was a partner in the Firm for 23 years.

Gerry's working/professional life was characterised by his extraordinary enthusiasm for the business in hand, the time he was prepared to devote to projects and his constant airing of new ideas. He was dedicated to his clients and the Firm yet still found time to play a significant supporting role in a range of professional bodies:

He had sat on the Council of the Society of Actuaries in Ireland since 2004 and was a current member of Council at the time of his death.

He was a member of the Society's Pension Committee for many years and chaired its workings in the period July 2006 to June 2009.

He served on the Council of the Irish Association of Pension Funds during the period 1993 to 2000.

He was an active member of the Institute of Management Consultants and Advisers Ireland and served as its President in 2002/2003.

Gerry was so pleased when his first grandchild – his son Mark's child - was born just a few weeks before he died. He will be sadly missed by his wife, Jasone, his children, Mark and Melissa, his daughter-in-law, Kerry Jane, and his many friends and colleagues.

Paul Kelly.

Dr. Garret FitzGerald

Dr. Garret FitzGerald died on 20th May 2011. He began his illustrious career with Aer Lingus, where he was responsible for economic planning, scheduling, rates and fares.

From 1954 onwards, he contributed a weekly column on economic and social affairs to the Irish Times.

Between 1958 and 1960, he became Economic Consultant to the Federation of Irish Industries and established a Committee on Industrial Organisation. Between 1961 and 1965, this committee surveyed the Irish industrial sector and initiated a rationalisation of industry in preparation for EU membership.

In 1959, Dr. FitzGerald became a Lecturer in Economics in UCD and in 1961 he was involved in establishing an Irish economic consultancy firm which assisted many firms until the early 1970s with advice and assistance in relation to EU membership.

In 1965, he entered politics and became a front bench member of Fine Gael and was appointed Minister for Foreign Affairs in 1973. In 1977, he was elected Leader of Fine Gael and became Taoiseach in 1983. During his term as Taoiseach, he negotiated the Anglo-Irish Agreement with Margaret Thatcher. In 1987, he stepped down as Leader following Fine Gael's defeat in the 1987 election and in 1992 he stepped down from Parliament altogether.

From 1987, he lectured widely throughout the world and was involved in several projects, one of which was Russian economic policy formation (1993-1994). He has published many books including his autobiography "All in a Life" in 1991 and in 2002 "Reflections on the Irish State."

In addition, he was a member of several international and national committees most notably the Trilateral Commission, established in 1993 to intensify contacts between the US, Japan and Europe.

Dr. FitzGerald was an eminent economist with a keen interest in issues within the actuarial profession. He participated in research projects within the Society and chaired many Society seminars. On 15 September 2005, he addressed the Society, following which, the then President of the Society, Colm Fagan, conferred him with Honorary Fellowship of the Society.

The Society's AGM - Thursday 9th June 2011

The Annual General Meeting of the Society of Actuaries in Ireland will take place at 6.00pm on Thursday 9th June, in the Alexander Hotel. The AGM will be followed by a meeting on 'Sovereign Exposures' presented by the Sovereign Exposures Working Party of the Society, chaired by Linda Kerrigan.

SAI Annual Subscription for 1 April 2011 to 31 March 2012

Subscription invoices have been issued to all members and are now due for payment. A surcharge of 10% applies to all subscriptions from 1 July 2011.

eNews from the Society

The Society now issues monthly eNews bulletins. These bulletins include a recap on any emails sent by the Society to the membership since the last eNews regarding Actuarial Standards of Practice or any significant issues in relation to the Society. All eNews bulletins can be accessed on the website at: https://web.actuaries.ie/enews - member log in required.

SAI 2011 Golf Calendar

Piers Segrave-Daly Matchplay Competition
This competition commenced in early May.

3-person Golf Scramble
Friday 24th June – Clontarf Golf Club
(entries close on 10th June)

Captain's Day
Thursday 18th August – St. Margaret's Golf Club

Faculty vs Society Annual Match
Date in the autumn to be decided

On the Move

Fellows:

Arran Nolan has moved from Sun Life Reinsurance to **Berkshire Hathaway**

Ronan Mulligan has moved from HSBC Reinsurance to **PwC Actuarial and Insurance Management Solutions**

Shauna McHugh has moved from Caledonian Life to **RSA Insurance**

Louise Thomas has moved from AXA Ireland to **RSA Insurance**

Ian McMurtry has moved from Canada Life to **CNP Europe Life**

Liam Scally has moved from Chartis Insurance to **Travelers Insurance**

Andrew Harford has moved from Aviva to **Atradius Reinsurance**

Ciara Regan has moved from Sun Life Reinsurance to **Deloitte & Touche Ireland**

Sarah Kearns has moved from Mercer to **Friends First**

Pedro Ecija Serrano has moved from AXA to **Aviva**

Students:

Geraldine Finucane has moved from Towers Watson to the **Central Bank of Ireland**

Lisabeth McCoy has moved from Anglo Irish Bank to **Irish Life Assurance**

Shane Kennedy has moved from Friends First to **Aviva (Europe) Life**

Eoin Larkin has moved from Mercer to **PwC**

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