Golf update

The Matchplay Competition is progressing well, Round 2 matches should be completed by now. Don't forget to check that you have the new date for Captain's Day in your diaries i.e. Thursday 7th August, 2003 in Edmondstown Golf Club. A further notice will be issued nearer the time.

The inaugural match between the Society and the Faculty of Actuaries will take place in Portmarnock Golf Club on Monday 22nd September 2003. Paul Duffy, the Society's Golf Captain, will shortly issue details of this match.

007

Photographs of the Annual Ball

Watch out for the July issue of the Newsletter for the Bond look-alikes!

News in Brief

Professional Affairs Committee

In the recent Member Survey, we addressed the issue of the Society's requirement for members to maintain their membership of the Faculty or Institute of Actuaries. 79% said that they would maintain their membership of the Faculty/Institute even if it were no longer a requirement. The Professional Affairs Committee considered whether our constitution should be reviewed to allow members to discontinue their membership with the Faculty/Institute if they so desired. After due consideration, the Professional Affairs Committee recommended to Council that no change should be made at present and this recommendation was approved by Council.

PRSA update

- Minutes of the meetings of the PRSA committee will shortly be available through the Society's website. In the meantime, contact Brendan Kennedy on brendan.kennedy@canadalife.ie if you would like a copy.
- The recent Social Welfare Act made some minor amendments to PRSA legislation. Regulations will be introduced shortly to give effect to these changes, and there will be consequent changes to GN31A and GN31B.
- A draft guidance note covering the Certificate and Statement required on transfer from an occupational scheme to a PRSA will be circulated before the end of June.
- There will be consultation on a guidance note covering PRSA annual certification in the autumn: the guidance note will be in place before the first certification date of 1 January, 2004.

Brendan Kennedy

Member Services Committee

The Member Services Committee (MSC) is delighted with the response from members to the invitation to become involved in the Society. The MSC will be in contact shortly with all who responded. Just to remind you that the 'Involvement Form' is available on our website, if you would like to get involved in the Society.

2002 Current Topics Paper

Last year, I wrote that it was intended that these Current Topics papers were written on an annual basis, and I am pleased to say that at least for the first year this ambition has been achieved.

To remind everybody, the aim of these papers is two-fold:

1. To provide a chronicle of the activities affecting actuaries in Ireland
2. To provide newly qualified actuaries with the opportunity to participate in the Society

In addition to the above aims, the two papers have provided excellent practical reference material for students taking the exams. On this basis, I would strongly encourage all students to read this paper.

The newly qualified actuaries contributing to this year's paper were:-

Investment:	Colm Fitzgerald
Life:	Elaine Spillane, Kevin Manning
Pensions:	Noel Coughlan, Ronan Fitzpatrick
Non-Life:	John Hannon

My thanks to these authors for their efforts in putting this paper together. As I said at the meeting – "If there is only one paper that you read this year then I recommend that it is this one". And if you don't read it or if you just want to whet your appetite then please read the thorough reviews of the evening meeting that have been written by Martin Gilbert and Tom Gallagher. These reviews are on the Society's website.

Duncan Robertson

Newsletter

June 2003

The Society of Actuaries in Ireland

Bruce Maxwell, Chairman of the Groupe Consultatif's Insurance Committee; Eamonn Heffernan, President of the Society of Actuaries in Ireland; Ad Kok, Chairman of the GC Freedoms & General Purposes Committee; Norbert Heinen, Chairman of the GC.

International Dimensions of Solvency II and Fair Values 27th March 2003

Despite the unseasonal balmy March weather, the content of this evening meeting managed to attract even the most hardened of actuarial sun worshippers away from the beaches and patios.

The President, Eamonn Heffernan, opened the meeting by welcoming the members of two Groupe Consultatif committees.
The relevant committees were the "Freedoms and General Purposes" Committee and the Insurance Committee, who had come to Dublin for several days of deliberations. These committees are chaired by Ad Kok and Bruce Maxwell respectively who were the speakers for this evening meeting. Also welcomed was Norbert Heinen who is the Chairman of the Groupe Consultatif.

Bruce Maxwell's presentation covered the history and activities of the Groupe Consultatif followed by a description of the work in progress on Solvency II. Ad Kok then updated the members on progress under fair value and commented on the practical aspects of implementing fair value.

Continued

Contents

The Groupe Consultatif Actuariel Europeen (to give it its full title) was founded in 1978 to represent actuarial associations in the countries of the European Union. There were 11 founding associations in 8 countries. There are three tiers of membership namely full, associate and observer. Full membership is given to associations in the EU who conform to the Groupe Consultatif (GC) standards of practice. Associate membership is given to associations outside the EU (but in Europe) who conform to the GC standards. Observer status is given to any European association who does not meet the GC criteria. The GC now consists of 30 associations in 27 countries covering 12,500 actuaries.

The GC has five committees (chairmen in brackets)

- Freedoms & General Purposes (Ad Kok).
- Insurance (Bruce Maxwell).
- Pensions (Paul Thornton).
- Investment & Financial Risk (Jean Berthon).
- Education (Chris Daykin).

The original mission of the GC was to provide advice and opinions to various organisations of the EU (e.g. the Commission, Council of Ministers, Parliament). In addition, the GC has become a focal point for communication on professional and technical matters among all European actuarial associations.

The GC has a very good working relationship with the European Commission and has made major contributions to EU policy in the areas of actuarial specialism. In the past, GC recommendations have formed the basis for the Third Life Directive and a report on the system of actuarial principles for the valuation of assets and liabilities of institutions for retirement provision.

The current issues being investigated by the GC are:

- Insurance.
- Reinsurance supervision.
- Solvency.
- Fair values.
- Professional responsibilities of insurance actuaries.
- Pensions.
- Proposed pensions directive.
- Portability and transferability.
- Tax obstacles.
- "Prudent person" approach to investment of pension fund assets.
- Professional responsibilities of pension fund actuaries.
- Investment – used of yield curves and asset/liability mismatching.
- Education – implementation of core syllabus for actuarial training in Europe.

There are also various publications available on the GC's website www.gcactuaries.org.

Solvency II

The origin of Solvency II was to address the weaknesses of existing solvency requirements and to take account of developments in risk management thinking. The objectives of the Solvency II project are to:

- Protect policyholders by ensuring that supervisors get an early warning of problems.
- Create a level playing field across all companies and financial sectors.
- Establish a solvency margin that is better matched to the underlying risks.
- Avoid undue complexity.
- Reflect market developments.
- Establish principles and avoid prescription.
- Dovetail with accounting standards to avoid duplication.
- Avoid unnecessary costs to the industry.

The EU is only one of a number of bodies reviewing solvency arrangements. The "celebrity squares" of other projects is set out in the slide below.

The Solvency II project has been subdivided into two phases. Phase 1 work involves researching various other risk management systems and projects such as Basel II, Risk Based Capital, internal risk models. The objective of Phase 1 is to generate a framework of a future EU solvency system. The objective of Phase 2 is to answer questions such as

- What risks should be taken into account?
- What rules should apply to technical provisions?
- How to include asset risk more explicitly?
- What about operational risk and other business risks?
- What risks can and should be quantified and what risks should be left to "qualitative" assessment?

The time schedule for the implementation of Solvency II is uncertain. One estimate is that a proposal should go to the EU Commission in 2004 with implementation sometime between 2005 and 2007.

Bruce then discussed some of the papers that have been issued by the EU Commission. The EU issued one paper in November 2002 and a subsequent paper in March 2003[1].

The first paper set out the commission ideas on the architecture of a new supervisory system. Some of the ideas are set out below:

- Adapt a 3 pillar Basel II type structure.
- Encourage companies to measure and manage risk.
- Allow for subsequent adaptations to international developments.
- Avoid regulatory arbitrage.
- Introduce a new concept of "target capital".
- Early warning indicators.

The second paper set out these in more detail with discussions on the quantitative and qualitative tools that could be used, how to level the playing field and define target capital and safeguard capital.

The tentative recommendations of the Solvency II project so far are

First Pillar

- Adopt technical provisions for life and non life.

[1] Nov 2002 "Considerations on the design of a future prudential supervisory system". March 2003 "Design of a future prudential supervisory system in the EU – recommendations by the Commission Services".

Corporate Governance: Lessons for Actuaries 10 April 2003

A good crowd assembled for the visit of the President of the Faculty of Actuaries, Tom Ross, who spoke to us on the subject of corporate governance and the lessons and opportunities for the actuarial profession.

A natural talker, Tom treated us to a wide-ranging and thought-provoking discussion on the topic. He had served on one of the committees reporting to the UK government on corporate governance that succeeded the Cadbury committee. He felt strongly that there were many ideas gleaned from his experiences that could be applied to the actuarial profession.

Back Row Left to Right: *Anil Shenoy, Matt O'Neill, John Hannon, Colm Fitzgerald & Patrick Maddock*

Front Row Left to Right: *Mairead O'Shea, Eamonn Phelan, Reamonn O'Sullivan, Roma Crawford, Ronan Fitzpatrick, Ian McMurtry, Emmett McCrann, Keith Butler, Maeve Regan, Tom Ross, President of the Faculty of Actuaries & Eamonn Heffernan, President of the Society of Actuaries in Ireland.*

Companies are established to provide goods and services that are useful to society – they won't survive in the long-term otherwise. In the same way, the actuarial profession, although small, has influence over the lives of millions through its involvement in life assurance companies, pension funds and other institutions. We have to ensure, therefore, that we apply this influence in a proper way.

The main purpose of corporate governance is to prevent companies from tipping over into greed, abuse of power or other anti-social behaviour. Some of the key features of good corporate governance can equally be applied to our professional activities. He gave the following examples;

- **Application of principles, not ticking of boxes.**

  Just as it is more important for companies to act in accordance with the spirit of guiding principles rather than technically satisfying regulations at a minimum level, so also is it more important, for example, for pensions actuaries to be strong in advising sponsoring employers to fund pension schemes adequately rather than just meeting weak statutory minima. A promise to employees to provide pensions after they retire is just that: a promise. It is not, as some others seem to think, an aspiration that can be reneged upon at the first sign of difficult conditions. Actuaries should be providing high-level strategic advice in this regard rather than just ticking boxes.

- **Openness, integrity, accountability, disclosure.**

  For business leaders and actuaries alike, "integrity" means doing the right thing even if is not to our personal advantage to do so. While not always easy in the real world, we should try.

- **Risk management and internal controls.**

  Good understanding of risks and the ability to control them is a major issue for all businesses. Tom foresees a situation where all major corporations will have a director of risk, whose role will be even more important than that of the finance director.

If there was one thought Tom would like us to take from his talk, it was this: the world is at our feet if we really concentrate on risk management. With our skills, we are well placed to become recognised experts in this field. The only thing holding us back is lack of self-confidence. The difference between an actuary and an accountant is that an accountant will confidently offer to carry out an assignment on risk control for a client while only knowing 15% of the subject matter; the actuary, while knowing 40% of the subject matter, won't pitch for the business until he knows 110%! We need to be bold if we want to make strides in this field. Oh, if he was only a young actuary starting out again!

As regards the reputation of the profession, Tom felt that we needed to get our governance structures, methodologies and behaviours right before someone else does it for us. For example, some in the profession are slow to adopt developing best practice, e.g., peer review, which he feels is an opportunity to add value rather than, as some contend, just an extra cost to keep our noses clean.

A lively discussion followed, which Eamonn Heffernan had to finally cut short to avoid us missing dinner.
A most interesting evening.

Michael Madden

Dynamic Financial Analysis – Making Use of your Simulations Contd.

- **Proportional Hazards**

  Proportional Hazards Transformations are common in the reinsurance world for pricing unsystematic risk. Here, the DFA model is adjusted such that the probability distributions in the model are negatively shifted by a chosen degree.

Case Study

Tony moved on to address the practical results of a real life DFA model, hence the subtitle of the paper 'Making use of your Simulations'. This model was based on a real general insurance company. That said, the techniques outlined in the case study are applicable to life assurance companies also.

Stochastic models typically produce large amounts of output data. The challenge is to interpret this information and convert it into valuable information to assist capital management decision-making.

The company in question wrote business across multiple lines (seven in total), each of which demonstrated different liability characteristics.

The impairment probability chosen in the DFA model was such that the capital required was approximately equal to the capital that is required under the current EU solvency rules (16% of net premium). Thus Tony showed us the results of six different capital setting approaches which in total gave a capital requirement roughly equal to that required by EU regulations. Two of these approaches illustrated how to deal with sampling error when carrying out the simulations.

The results were especially interesting when examined at the level of the different lines of business. For example, the fire portfolio, while profitable, was shown to consume large amounts of capital well in excess of the EU regulatory requirement. Tony ranked the simulations in decreasing order of losses on the portfolio and it was clear that the large amount of capital required was driven by the possibility of catastrophes claims. By contrast, examination of the simulations on the motor portfolio showed a much greater correlation between the profits and the investment returns– a characteristic of the long-tailed nature of this portfolio.

Discussion

A good question and answer session followed Tony's presentation. In particular it was noted that regulators are looking at DFA models as a future method of setting regulatory capital requirements, although much work is needed to determine appropriate standards. It was mentioned that already regulators in general look for good risk management practices such as the use of DFA models.

Conclusion

This was a very clear and well-delivered presentation on what is a complex subject. In particular, Tony's talk served as an excellent insight into the uses of DFA models and how they can be used as a valuable management tool to both assess the capital needs of insurance portfolios and, as part of a risk management framework, how they can measure the relative risk underlying different business units.

Ceall O Dunlaing

Appointment of a Pensions Ombudsman

Paul Kenny has been appointed as Pensions Ombudsman. He has asked us to advise members that his office should be open to the public by July 2003 and he will shortly advise us of contact details.

Meanwhile, work is in progress on Regulations to be issued by the Minister, which will, in effect, be the terms of reference of the Pensions Ombudsman and will also provide for such matters as the internal disputes procedures required by the Pensions Act.

- Have two levels of capital rules, namely internal model basis and a minimum level of capital.

Second Pillar

- Set principles for internal control.
- Set principles for sound risk management.
- Have a supervisory review process (closer contact between supervisors and companies and more transparency).

Third Pillar

- Determine the level of disclosure.
- Coordinated reporting for IASB, Basel II, IAIS purposes.
- Should disclosures and reporting be public or private?

Bruce concluded by saying that there was a lot more work to be done in the GC for Solvency II. This was going to require considerable effort from the GC insurance committee.

Fair Values

Ad Kok introduced his presentation by showing us his "worry stones". *(see slide below).* The subject of fair values had given him cause to show them considerable attention in recent years.

The fair value project is divided into two main sections

- The replacement of the current IAS 39 with a standard on the valuation of financial instruments.

- The development of a standard to value insurance contracts on a fair value basis.

The fair value project is proceeding more slowly than expected. There is a practical difficulty of meeting the 2005 deadline.

Ad then provided an example of the valuation of a contract under the fair value methodology.

The main players in the development of the new standards are

- IASB
- IAA
- "Insurers United"
- IAIS
- EU

The IASB recognised that implementation in 2005 was not realistic. They subdivided the project into two phases:

Phase I

This involves the continuation of GAAP for the valuation of insurance contracts up to and beyond 2005 (with additional disclosure).
IAS 39 will be used to value non insurance contracts. Catastrophe and equalisation reserves for general insurers will be eliminated by 2005. The first exposure draft is due in the first half of 2003 with the final IFRS due in the first half of 2004.

Phase II

This will cover all that remains to be done from Phase I. The anticipated schedule would be that at the end of 2004 no fair value need be shown but that full fair value would have to be shown by the end of 2006.

The "insurers united" consists of a group of European insurers.
They have welcomed the proposals but have some concerns over the abandonment of the deferred and matching principles and the practical implementation of fair value.

Ad went on to describe the work in progress which consisted of

- Definition of insurance contracts.
- Cost of capital and margins analysis.
- Treatment of renewals (are they a valuable option to the policyholder?).
- Guarantees and options (do we assume a 100% take up rate?).
- Day one profit (if cost of capital is not considered in fair value there could be a day one profit).

Ad described some of the practical considerations of the implementation of fair value:

- IT systems cannot cope with stochastic analysis and link to embedded value systems.
- Earnings reporting and analysis will be more detailed and require greater resources.
- Past earnings will have to be converted to fair value accounts.

He concluded his presentation by reminding people that they should continue to worry!

Discussion

Given the extensive subject matter questions and comments came thick and fast from both members and our Groupe Consultatif visitors.

There was some discussion about whether there could only be one fair value. There was agreement that this was reliant on assumptions used. There may not always be a market to benchmark these assumptions.

Several members issued warnings that for comparison purposes the 2004 accounts would have to be restated to address Phase I requirements. This would mean that the balance sheet at the end of 2003 would need to be Phase I compliant also.

There was some discussion around the myriad of bodies who are all conducting their own solvency review. These seemed to be uncoordinated and acting independently of each other.
There were concerns that this would lead to several different solvency requirements to be satisfied.
There were some concerns that actuaries should not promise that they had the "right answer" to solvency and that the events of recent years should be a salutary lesson to those who thought they did.

Another issue discussed was that management of companies may be distracted from generating long term value by trying to avoid volatility in the accounts. This may lead to redesigning contracts although some companies may be happy with the volatility as long as they outperform their competitors.

Bruce reiterated his request for volunteers to help with the development of Solvency II and indeed for other projects.

The President brought the meeting to a close by thanking Bruce and Ad for their presentations and work.
He noted that it was very useful that the GC had the ear of the EU which improves the standing of the profession in Europe. He reiterated that members should help out. The message is clear : YOUR SOCIETY NEEDS YOU!

Note : Both presentations were very comprehensive and detailed.
I recommend that any interested members review the full presentations which are available on the Society's website (www.actuaries-soc.ie).

Colin Murray

Photo Diary:

Members of the Society and of the Groupe Consultatif at the reception hosted by the Society following the Solvency II and Fair Values Evening Meeting in the Conrad Hotel.

Left to Right: Steen Ragn Andersen, David Paul & Alf Guldberg

Left to Right: Bill Hannan, Michael Sheard & Pat Healy

Left to Right: Paddy Maher, Jeff Davies & Jonathan Goold

Left to Right: Gail Wilson, James Ball, Colm Fagan & Philip Shier

Left to Right: Rosemary Commons, Ivor O'Shea & Michelle Roche

Left to Right: Mike Hartwell, John Cliff, Tony Jeffery & Bruce Maxwell

Dynamic Financial Analysis – Making Use of your Simulations

On the 2nd April 2003 Tony Brooke-Taylor of B&W Deloitte gave a talk based on his above titled paper to a well-attended evening meeting of the Society. This article summarises some of the points made that evening.

Tony's talk consisted of two parts. Firstly he explained the basic concepts behind Dynamic Financial Analysis (DFA) and secondly, by using results from an actual corporate DFA model, he showed how this analysis could provide valuable information for managing the capital of insurance companies.

Tony began by removing the shrouds of mystery that often surround this subject and explained clearly some of the concepts behind DFA.

Capital Requirement Measures

Capital requirements in the DFA world are often determined with reference to the 'impairment probability' i.e. that amount of capital required such that the probability of survival to the end of the period is 1- p(impairment). Tony mentioned two measures commonly used to construct DFA models to determine capital requirements:

- **Value at Risk (VaR)**

  This is the amount, which for a given level of probability over a time-period, that losses will equal or exceed. VaR is widely used in the banking industry.

- **Tail-VaR**

  This is related to VaR, but an additional factor is added to reflect the conditional expectation of the loss given that the loss exceeds the chosen percentile.

  Variants of Tail-VaR are also known as Expected Policyholder Deficit (EPD), Conditional Tail Expectation (CTE) and Economic Cost of Ruin (ECOR).

Coherence

Tony explained the concept of 'Coherence'. Coherence is a set of properties that are regarded as desirable features of a model used to allocate capital. These features are:

- **Subadditivity**

  The capital requirements of an entity with more than one portfolio must be less than or equal to the sum of the individual capital requirements of each portfolio taken in isolation.

- **Monotonicity**

  If the cashflow strains on portfolio 1 are always less than those on portfolio 2 then portfolio 1 has a lower capital requirement.

- **Positive Homogeneity**

  If the cashflow strains on a portfolio are multiplied by a constant then the capital requirements on the portfolio are also multiplied by this constant.

- **Translation Invariance**

  If the portfolio's strains are increased (addition) by a constant amount, then the capital required is also increased by the increase in strains.

  VaR does not meet the subadditivity criterion and hence, while still useful, this method does not meet the requirements of the coherence principle. Tail-VaR fulfils all of the coherence features.

Transformations

Tony mentioned that ground-up stochastic models will always exclude some real-world effects. This results in models that tend to under-estimate a portfolio's capital requirements. For this reason, DFA models are often adjusted by way of 'Transformations'. Transformations attempt to capture non-systematic risk and hence reconcile the market consistent valuation with actual market value. Tony explained two such adjustments in common use, Frictional Cost and Proportional Hazards.

- **Frictional Costs**

  Frictional Cost theory suggests that as profits diverge from that expected, the overall costs on the business increase. At a simple level, when profits of an organisation increase, the management tend to have less focus on controlling costs. Conversely when a business suffers losses, the effort required to manage those losses also tends to increase costs. It was noted that it is very difficult to set the parameters underlying frictional costs.

  Tony summarised frictional costs by saying that they "translate capital requirements based on 'pure' underlying risk into those reflecting management's ability to deal with it".

Continued...