

Newsletter

December 2006

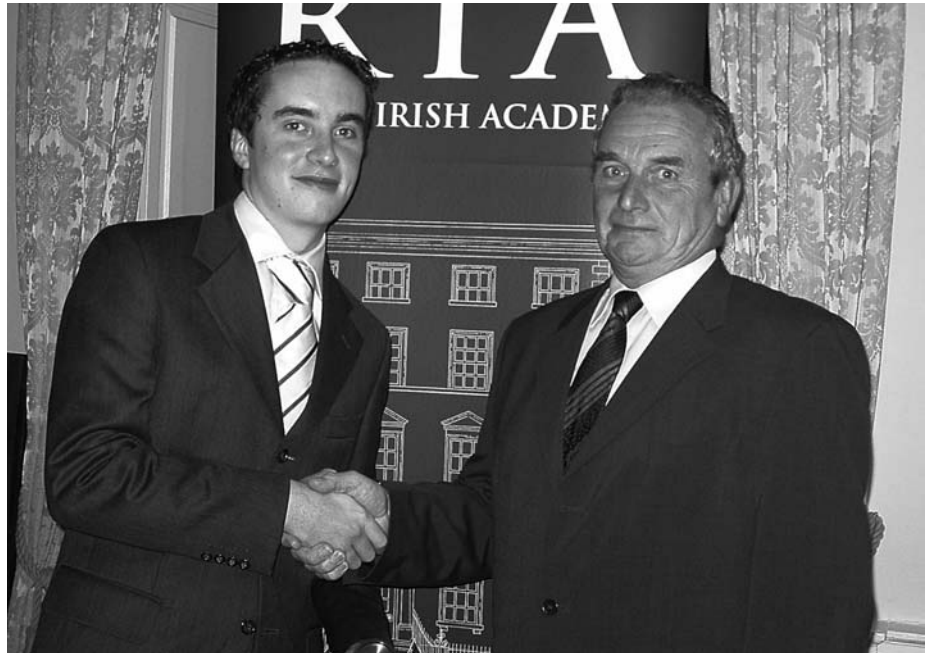
The Society of Actuaries in Ireland

Editorial

It's that time of year again - a time for reflection on what we have achieved during 2006! It has been a fantastic year for the Society. We have issued an unprecedented eight press releases this year, covering topics ranging from pensions to penalty points, with all receiving excellent media coverage. We have had almost treble that number in terms of Society events including evening meetings, consultation meetings, fora and the highlight of the year - the annual ball! But it's not all fun. We are acting now more than ever on our Mission Statement which is "to develop the role and standing of the actuarial profession and enhance its reputation, in particular for serving the public interest." The members of the Society's various committees and sub-committees have worked tirelessly and voluntarily during the year producing the papers and guidance needed to achieve our Mission Statement. Our President, Colm Fagan, continues to provide both strong leadership and a framework of engagement with the entire membership of the Society which ensures members have an open forum in which to share views. The Society operates effectively because of the time and effort put in by its members and the work of the "in-house" team of Mary Butler, Melanie Braune and Aisling Kennedy. Thank you to one and all for your efforts during 2006! The Newsletter's Editorial Team would like to wish our readership a very happy Christmas and a wonderful 2007!

On the 16th October 1843, William Rowan Hamilton, in a flash of inspiration while out walking, carved the formula $i^2 = j^2 = k^2 = ijk = -1$ into the brickwork of Broome Bridge, over the Royal Canal in Cabra. This piece of early graffiti became one of the legacies of reputedly one of the best scientists Ireland has ever produced.

The Hamilton Prize in Mathematics



John & Michael McCarthy

He was a mathematician, a physicist and an astronomer, whose early work in the field of dynamics led to the later development of quantum mechanics. His discovery of quaternions is probably his most important invention today.

To commemorate the 200th anniversary of Hamilton's birth in 2005, the Royal Irish Academy, with sponsorship from DEPFA Bank, initiated the annual Hamilton Prize in Mathematics. The mathematics departments of the 9 universities in Ireland are invited to nominate their best mathematics student in the penultimate year of their studies for receipt of the Prize. The Prizes are awarded on the 16th October each year, the anniversary of Hamilton's breakthrough discovery.

Pictured above is Michael McCarthy, student of Actuarial and Financial Mathematics at Dublin City University, being congratulated on

the receipt of his Hamilton Prize for 2006 by his proud father and Fellow of the Society of Actuaries in Ireland, John.

Contents:

The Hamilton Prize in Mathematics	Page 1
Special Savings for Retirement	Pages 2 - 3
An Introduction to Stochastic and Market Consistent Modelling	Pages 4 - 5
Student News and Education Update	Page 6
SAI Press Releases	Page 7
Backpage	Page 8

On September 21st in the Alexander Hotel, Roz Briggs and Brendan Kennedy presented an overview of the "Special Savings for Retirement" report prepared by the Pensions Board for the Minister for Social and Family Affairs, Mr. Seamus Brennan TD, in July 2006.

Introduction

The report considered the practical issues associated with the introduction of a mandatory pension system in Ireland to augment the existing State pension. The presentation was in two parts. Roz first gave a summary of the development of public policy on pension provision in Ireland. Brendan then outlined the approach followed in preparing the report and the main recommendations of the report.

Development of Public Policy on Pension Provision

In order to place the report in the context of the national debate on mandatory pensions, Roz gave an overview of past government initiatives to improve pension provision, improving both adequacy and coverage.

- 1976: Green paper on pay related supplementary state pensions.
- 1986: Creation of the National Pensions Board.
- 1990: Pensions Act – Roz commented on what it had achieved in terms of equality and fairness and its success overall.
- 1998: National Pension Policy Initiative (NPPI) – this aimed to further develop the pensions system in Ireland and emphasised the central importance of voluntary pension provision in achieving this.
- 2005: National Pensions Review - this reviewed the impact of NPPI and while it considered a mandatory pension system, the consensus still remained that

improving voluntary pension provision was the best way of improving overall pension provision. It recommended a number of enhancements to the voluntary system to encourage the greater take up of pensions.

- Feb 2006: Minister for Social and Family affairs requested a report on the implementation of a mandatory pension system in Ireland. In response, the Pensions Board produced the "Special Savings for Retirement" report which was a technical examination of the costs and practical issues of implementing such a system. Roz highlighted the fact that the report did not give a view on the desirability of a mandatory system over other approaches.

Roz concluded by commenting on the increased importance of pension provision in government policy. Pensions now form part of the National Wage Agreement pay round talks and the new partnership arrangement, "Towards 2016", commits to delivering a green paper on pension policy by Easter 2007.

Comparison of Possible Mandatory Pension Systems

Brendan Kennedy then proceeded to outline the approach followed in preparing the "Special Savings for Retirement" report. Rather than discussing the principles of a mandatory system, the report identified four main types (listed below) of mandatory system and considered the costs and issues of each.

- Model 1: Increased State Pension
- Model 2: Mandatory Supplementary Pension
- Model 3: Soft Mandatory System
- Model 4: Hybrid System (Model 1 and Model 2)

Special Savings

Projections of the effect of each model had been produced by actuarial consulting firm, Life Strategies.

Model 1: Increased State Pension

The impact of increasing the State Pension from €10,000 to €15,000 over 10 years was considered. It was felt that this approach would be easy to administer and, in terms of social sharing, would benefit both existing and future pensioners. The main issue was the very high cost of such a solution, due both to the higher level of pension and the higher number of people claiming the pension.

Model 2: Mandatory Supplementary Pension

This proposed a mandatory system where all employees and the self employed contribute 15% of income, between €20,000 and €60,000, to provide a replacement income of 50%. Brendan highlighted the need to provide investment guarantees where contributions are mandatory and the complexity of administering such a system.

Model 3: Soft Mandatory System

This is a variant of Model 2. Individuals may opt out and there would be exemptions for those who are already members of a pension scheme. In addition, it would allow one off access of up to 25% of the fund, tax free, pre-retirement. Brendan noted that the impact of this system had not been modelled as its success would be dependent on many factors which are difficult to quantify, for example, popularity.

Model 4: Hybrid System

This is a combination of Models 1 and 2 and has the benefits and challenges of each. It proposed increasing the State Pension from €10,000 to €12,000 with all employees and the self employed contributing 15% of income between €15,000 and €60,000.

for Retirement

At this point, Brendan presented three sets of projections illustrating the impact, as a % of GNP, of Models 1, 2 and 4 on:

- Pension Coverage: All models will result in increased coverage with Model 1 resulting in the greatest coverage.
- Pension Contributions: This showed the higher cost of Model 1 relative to the other models.
- Cost to the Exchequer: This showed Model 4 as having the highest exchequer cost over the long term.

The projections show that while Model 1, the Increased State Pension, would result in the greatest improvement in retirement incomes for all, the cost of such a system is very significant. In order to ensure a sustainable solution, a compromise would be needed.

Recommendation

The report recommended the Hybrid System with a combination of an Increased State Pension and a Mandatory Supplementary Pension as the most appropriate and practical approach to improving the position of pensions in Ireland. The system would be known as the Special Savings for Retirement and individuals would hold "Special Savings for Retirement Accounts" or SSRAs.

Discussion

A lively discussion then followed with a number of interesting points being raised from the floor. Some of the main issues raised were:

1) Was the Hybrid System the correct approach?

In general, it was felt that Model 1, the Increased State Pension, was the most effective way of improving pension provision in Ireland. Both Roz and Brendan stressed that the

recommended approach was a practical compromise and not necessarily the best option.

2) Would the introduction of a Mandatory System lead to a "race to the bottom" in terms of pension provision?

The Australian experience where the introduction of a mandatory system resulted in the minimum pension becoming the standard was commented upon. In response, Roz and Brendan felt that Ireland could not be compared directly with Australia due both to the differing tax systems and pre-existing pension arrangements. Brendan noted that a few countries have introduced a mandatory system where a good supplementary system already existed so comparisons were difficult.

3) Was private sector investment ruled out if a mandatory system was implemented?

The report took the view that if there were investment guarantees with the government covering any loss, then it would be reasonable for the government to wish to control investments.

Brendan concluded by highlighting that the recommendation was the broad view of the Board but that more work was required on the detail.

Colm Fagan closed the meeting and thanked Roz and Brendan for the presentation.

The full report and presentation slides are available on the Society's website.

Mary Hall

An Introduction to Stochastic and

On Thursday 26th October, Matthew Brownlie of Zurich UK gave an interesting presentation on "An Introduction to Stochastic and Market Consistent Modelling" to a well attended meeting of the Society of Actuaries in the Westin Hotel.

There can be considerable confusion surrounding the area of stochastic modelling. In Matthew's opinion people can easily become immersed in the complexities of the topic and lose a feel for the basic ideas. The aim of his presentation was to give the attendees an understanding of the underlying concepts.

Objectives

Matthew began by outlining the main points he wished to demonstrate:

- Market consistent/stochastic methods are not hard. They are just different from the traditional deterministic methods.
- Market consistent methods do not produce the "true" or "right" answer. They just answer a particular question.
- Deterministic methods are not wrong. They are a different answer to a different question.
- Market consistent/stochastic methods are a useful and important extra tool in understanding reserves and managing value and risk.

Market Consistent Concept

Matthew described two main types of deterministic reserve –

A realistic reserve is usually used for traditional embedded values. It can be defined as the value of the assets that the company needs to set aside now to be 50% certain that it will have enough to meet the liabilities as they fall due. Projections are carried out on best estimate bases and discounted at the median asset return.

A prudent reserve, used for statutory purposes, is based on more prudent assumptions and the discount rate is a prudent asset return. It is the value of the assets that the company needs to set aside now to be $y\%$ certain that it will have enough to meet the liabilities as they fall due (where $y\%$ is often much greater than 50%).

When we consider **market consistent reserves**, we need to think about matching our liabilities. An example of this, commonly used by companies, is where gilts are used to back annuities. A definition of a market consistent reserve is the value of assets required to be able to perfectly match the liabilities against every possible economic scenario (using best estimate non-economic bases). This process involves finding the replicating portfolio of assets which perfectly match the liabilities and the market consistent reserve will be the market value of this portfolio of assets. The no arbitrage assumption is essential when considering market consistent methods.

General Reasoning

Matthew worked through a number of simplified examples to illustrate the differences between realistic, prudent and stochastic reserves. He considered the impact on the calculation of the three reserves based on a number of different asset holdings. The examples demonstrated an important concept in relation to market consistent reserves. They do not depend on the value of the actual assets the insurer is invested in, but rather look at the value of assets needed to perfectly match the liabilities held. In contrast, realistic and prudent reserves will vary depending on the actual asset mix, such as whether your assets are invested in government bonds, corporate bonds, equities or some other asset class. Thus, the market consistent reserve is not a function of the asset holding at the time of the

calculation but rather a function of how much it would cost to buy the portfolio of perfectly matching assets.

Matthew used another example to highlight a key advantage of the market consistent approach over the deterministic approach. It places a value on option and guarantee costs which are ignored by the more traditional deterministic approaches.

In summary, the examples illustrated the following features of a market consistent reserve which shows why it is becoming increasingly favoured by the regulators:

- It is objective as it is calibrated to the market.
- Companies cannot manipulate the numbers by changing backing assets.
- It calculates the fair market value of the liabilities.
- It places a value on options and guarantees where they are given a zero value in more traditional approaches.

However, some of the more negative features which should be noted are:

- It can be a volatile value as it follows market movements. Traditional methods tend to be more smoothed.
- Mismatching risk will exist, unless the perfectly matching assets are purchased. The market consistent method does not highlight this risk (e.g. there is no change in the reserve when we move to riskier assets).

Market Consistent Theory

Matthew then went on to delve a little deeper into the area of market consistent theory. As previously mentioned, the market consistent method is based on the idea of replicating portfolios. However, in reality it may prove very difficult to

Market Consistent Modelling

find assets in the market that perfectly match our liabilities.

Stochastic modelling can be used to find the market consistent reserve using the following steps:

- Model 1000 scenarios, each with its own discount factor.
- Calculate the liability cashflow in each scenario.
- Discount within each scenario using scenario dependent factors (which can be found by using a model such as Black Scholes).
- The scenarios and discount factors are calibrated by checking that we can produce the correct market values of various assets e.g. options, swaptions and risk free bonds. In this way, we can extrapolate from assets found in the market to find what the market consistent reserve should be.

Matthew added that market consistent modelling and stochastic modelling are not the same. Stochastic modelling is simply a mathematical tool which can be used to calculate the market consistent reserve. One can stochastically model possible scenarios without doing anything related to market consistent methodology (e.g. probability of ruin projections). Furthermore, the market consistent reserve can be obtained without using stochastic modelling.

Applications

Finally, Matthew outlined two of the main practical uses of market consistent modelling for insurers.

Reserving:

Market Consistent Reserving has become the most popular method in the UK. In particular, it is favoured by the regulators as it picks up the cost of options and guarantees. However, it does not pick up on the mismatch risk that will exist if the company

hasn't purchased the assets that perfectly match its liabilities, so stress testing will be required.

Embedded Values:

This involves finding the replicating portfolio for an in force profit stream. In practice, these assets may not be purchased due to practical constraints, for example, such assets may not exist. However, the market consistent value of an uncertain profit stream is still a good hypothetical starting point. This approach will calculate a shareholder value in a way that can be compared to the market value of other possible market investments, as it is calibrated to the same market the shareholder hopes to invest in. Other advantages are similar to those for market consistent reserving (i.e. it is objective as it is calibrated to the market and allows for the cost of options and guarantees).

Discussion

A lively discussion followed, with a number of questions being raised from the floor.

- Matthew was questioned on what he felt had been the most important phase for him personally in the process of the practical implementation of this type of modelling. He said that, at the outset, most of the terminology had been unknown to him. He was given models outputting numbers he did not understand. He highly recommended investing time in understanding the basic concepts by putting together a simple spreadsheet to approximate the answers. He had found this to be a very worthwhile exercise in increasing his understanding.
- A question was also asked as to the extent to which companies use this modelling for non-economic assumptions. Matthew felt that it was not widely used

across the industry for non-economic assumptions as it is difficult to calibrate these assumptions to anything market verifiable e.g. there is no fluid market in mortality or morbidity.

- An interesting comment was made about the fact that these methods have been in the academic world for years but companies have only recently begun to adopt them. The question was raised as to whether we are still years behind academia and whether there could be other new technologies and techniques out there which would be beneficial for companies to use. Matthew felt it was difficult to say, but pointed out that the complexity of the liabilities of insurance companies would have delayed the introduction of this kind of modelling. In addition, suitable technology and computing power have only become available in recent years.

Anthony Brennan closed the meeting, thanking Matthew for his enlightening presentation and offering him a small memento.

The presentation is available on the Society's website.

Sheila Purcell

Student News and Education Update

Night at the Dogs

The Student Society had their annual night at the dogs in Shelbourne Park on Wednesday, September 27th.

There was a great turn out from the serious 'where's my cheque book' gambler to the 'sorry €2 is the minimum bet' gambler. The night seemed to go in slow motion for those having one loser after another and although there was mention of some good wins, no confirmation came!

After the final trio came in and the money was a little better, the night progressed to Flannery's in Camden Street. For some, the night only started here and was definitely a lively few hours. Once the dancing started it was sure to continue into the wee hours. The night ended with a scene from Riverdance – very well attempted by all I must say – but for the moment, maybe we should stick to the day jobs!

Student Society Pool Competition

The next event that followed was the Student Society Pool Competition on the 8th of November in the Palace on Camden Street. A total of 29 entered, vying for the coveted title of 'Student Pool Champion', not to mention bragging rights over any colleagues that might be beaten along the way. The action kicked off at 6.30pm (with thanks to all for the prompt attendance) with the group stages. Competitors were divided into eight groups and with only two to progress, the competition was sure to be tight.

Newbies Fiachra Harnett from Irish Life and Michael Danaher from BuckHeissmann were edged out by the Hibernian duo of Declan Boland and David Woods in Group A, while Mercer sharks Malcolm Wilkinson and Phil Mullen were too good for Hibernian's Donal Garrihy and Michael Liston from Hewitt.

James Bradley from Irish Life won Group C comfortably, with Ciaran Belton (IPSI) following him through at the expense of Eamonn Mernagh (Irish Life) and Padraig Shorthall (New Ireland). Group F was expected to see reigning champion John Groarke progress en route to an attempt at regaining his crown but it was not to be – he was undone by his old foe Brian O'Donoghue from Hibernian. With Terry Brannigan going through too, there would be a new winner (couldn't imagine John wearing a crown anyway). Hewitt's Darragh Brady made a valiant attempt in this Group of Death but 'Superman' didn't have luck on his side and exited.

Group H comprised Carmel McElvaney (Capita), Helen Hurley (Allianz) and Hibernian gals Keri Monaghan and Seanna Hanratty. Well done to Carmel who scooped the ladies first prize with some excellent play, winning the group with maximum points. Groups D, E and G only comprised three players. David Boland and Darragh Burns exited in Groups E and G respectively, but with a three way tie in Group D, a respotted black competition ensued. A large crowd gathered around the table to witness this tense finish to the group. Nails were bitten to the quick and supporters were seen to look away, the nervy climax getting the better of them. It didn't bother Eamonn O'Leary, who coolly won his two contests, with Brian O'Sullivan (Irish Life) going through also. The second round saw Brian beaten by Brian O'Donoghue, with Eamonn also losing out to Hibernian's David Corrigan.

A high quality match saw Stephen Nugent, the Irish Life man having flown in especially for the prestigious tournament, knock out James Bradley and he followed it up with a quarter final success over Corrigan. With Declan Boland playing some excellent pool in the last 16 to dispense of

Brannigan and Belton, a quality semi-final lay ahead for both players.

Elsewhere, Phil Mullen won a yawner against James Treacy with David Woods controversially beating Bernard Lee (Hibernian). Phil and David met in the semi-final, but not until Phil won an exciting black ball game against Carmel McElvaney to secure his place. The semi was a close affair, but Phil always seemed to have the upper hand in a 3-1 victory. With Boland edging past Nugent in a tight match, a close final was expected and so it was subsequently proved.

The match went to a deciding frame, with Phil edging it in the fifth to secure the first prize. It was an excellent night all round and next years competition is already being awaited with baited breath, with rumour having it that a perpetual trophy will be presented to the winner called the golden cue factor. In the meantime, a career as a (truly awful) comedian awaits your correspondent.

David Woods
Cathriona Callan

Education Update

The following is a brief update on the modeling exam (CA2) and the Business Awareness Module (BAM – CT9) which were introduced because employers and users of actuarial services wanted the actuarial qualification expanded to create more 'rounded' actuaries with improved:

- communication skills
- business understanding, and
- team working skills

Core Applications 2 modelling (computer based) exam - CA2

The aim of this module is to ensure that the successful candidate understands how to model data in practice, maintain an audit trail for

Update on the Society's PR activities

information and communicate the results. It is a two day residential course, with an estimated 25 hours of own preparation time required in advance of the course.

This module will take place on the 1st & 2nd of February 2007 in DCU and we now have a full class for this course. We are currently discussing dates for a further course in DCU in 2007. Irish resident students may alternatively attend the course in the UK. There is a list of course dates and availability on the Institute & Faculty website.

Business Awareness Module (BAM - CT9)

The aim of the Business Awareness Module is to provide candidates with an understanding of:

- the business environment they will be working in;
- how to tackle business related problems;
- the basic legal principles that are relevant to actuarial work;
- and their professional responsibilities.

While we have not yet finalised a date for this module in Dublin, we are confident that by January 2007, we will be in a position to announce a date for this module to be held in March/April 2007, which will be delivered by the Institute & Faculty. New students are strongly encouraged to attend the BAM within 18 months of joining the Profession.

We will continue to update you on any developments via email. If at any stage, you would like any further details, please contact me via the Society's office or contact Mary Butler at:

mary.butler@actuaries.ie

Mike Claffey
Chairman
Education Committee

In line with feedback received at Members' Meetings, hosted by the President during the course of the year, the Society has increased its level of PR activities. As mentioned in the editorial, we have issued eight press releases so far in 2006, which is more than we issued during the last three years.

The following press releases have been issued to date in 2006:

November 2006

Consumer understanding of risk

October 2006

Irish death rates remain higher than average for developed countries

October 2006

Concerns expressed about the treatment of Irish workers who are members of UK pension schemes

September 2006

Road Safety: success of penalty points not maintained

August 2006

Supplementary Pensions

July 2006

Funding Standard

February 2006

Actuaries welcome independent review of pensions work

January 2006

Society of Actuaries in Ireland welcomes National Pensions Review Proposals

- Last year, following a tendering process to review our PR consultants, Michael Moloney of Setanta Communications was re-appointed.
- Council Member, Gareth McQuillan, was appointed as the Society's PR Chairman.
- Gareth formed a PR sub committee, comprising representatives from each of the practice committees and the

newsletter team. The Society's Directors' of Professional Affairs and Member Services as well as Michael Moloney also sit on this sub-committee.

- The PR sub-committee is responsible for:
 - Determining the strategic PR objectives of the Society.
 - Suggesting and discussing potential PR opportunities, and agreeing on whether to progress them.
 - Promoting and advancing the PR agenda within the individual Practice Committees from which members of the sub-committees are drawn.
 - Where relevant, planning and implementing PR related activities (with support from the Secretariat and external PR Advisors).
 - Acting as a support to the Secretariat and as liaison points with Practice Committees in handling reactive media queries.
- Members are emailed in advance of any releases being issued and all press releases, briefing statements and submissions are posted on the Society's website under Press Office.

If you have any suggestions, issues or research work that could be shared or debated with members or could be considered for circulation to the media, we would very much like to hear from you.

DID YOU KNOW

We all know that Ed Joyce has been selected for the Ashes Series. But, did you know that Ed is a son of Jimmy Joyce, FSAI and Past President of the Society!

(If you have any suggestions for our new 'Did you Know' column, we would love to hear from you).

Golf

The Society's 2006 golfing year continued right into the autumn with the conclusion of the Matchplay Competition, the SAI Links Challenge and the annual Faculty v Society Match.

Martin Haugh finally overcame his HLD colleague, Conor Daly, in the second semi-final and then went on to beat Michael Madden in a highly competitive final played at Powerscourt Golf Club, to claim the Piers Segrave-Daly Matchplay Trophy.

The SAI Links Challenge was held in County Sligo Golf Club, Rosses Point, on October 6th and was won by John McCarthy. It proved to be a very enjoyable occasion, not least the dinner afterwards in the nearby Radisson.

The Faculty v Society Match was held on November 21st at Muirfield. The Society's team consisted of Duncan Robertson, Martin Haugh, Michael Madden, John Devine, John Morrissey, John McCarthy, Jonathan Goold, Tom Collins, Micheal O'Briain and Frank Downey.

Amazingly, the Faculty were unable to field a full team and the Society agreed to 'lend' them their two 'Faculty' members, Duncan Robertson and Martin Haugh, who promptly went on to record the first victories for the Faculty in this event! The match was eventually drawn and the Quaich thereby retained by the Society. More importantly, the Faculty, and in particular their Captain, Fraser Smart, were excellent hosts and a magnificent time was had by all in Edinburgh.

In conclusion, I would like to thank everyone who helped make 2006 a very successful golfing year for the Society, including all those who participated in the competitions and Mary Butler for her usual effortless efficiency in organising the events.

Frank Downey, Golf Captain 2006

Colm Fagan, President, Society of Actuaries in Ireland and Martin Stevenson, President, Institute of Actuaries of Australia, shaking hands following the signing of the Mutual Recognition Agreement (MRA) between both organisations.



Copy of the MRA together with all other MRA's are posted on our website:

http://www.actuaries.ie/About_the_Society/Membership/Categories/Categories_Listing.htm

The SAI Golf Team at Muirfield

Fraser Smart, Captain of the Faculty team presenting the trophy to the SAI Captain, Frank Downey.



On the Move

Fellow Members

Pat Curtin has moved from Watson Wyatt to **AEGON Financial Assurance Ireland Ltd**
Mairead Coleman has joined **Mercer HR** from Watson Wyatt
Ian Geary has joined **Prima Wealth**
Russell Keenan has moved from Hibernian to **Acumen Resources**
Ian McMurtry has moved from Hibernian to **Canada Life**
John Bolger has moved from Hibernian to **Standard Life**
Karl Alexander has moved from Coyle Hamilton Willis to **MGM International**

Student Members

Roy Williams has moved from Mercer HR to **XL Re Europe**



Society of Actuaries in Ireland

102 Pembroke Road, Dublin 4. Telephone: +353 1 660 3064 Fax: +353 1 660 3074 E-mail: info@actuaries.ie Web site: www.actuaries.ie