



Newsletter

July 2004

The Society of Actuaries in Ireland



Eamonn Heffernan, Brendan Kennedy, Tim Gardener, Pat Healy, Dr. Garret FitzGerald, Stephen Cooper.

Pensions in 2004: Challenging the Status Quo

The Society hosted a very successful Pensions Seminar on the 25th of March. The President, Pat Healy, opened the seminar which was chaired by Dr. Garret FitzGerald and included presentations by Stephen Cooper, Tim Gardener, Brendan Kennedy and Eamonn Heffernan.

Opening address by the President, Pat Healy.

Pat began his address by observing that it had been a challenging period for pension funds in recent years. On the assets side of the balance sheet we have seen a shortfall in investment returns, while the cost of provision has been increasing due to lower yields (both nominal and real) and improvements in longevity (the implications of which were considered at the Ageing Population conference

in October).

Due to changes in the regulatory framework and accounting requirements, the emphasis is now on market values. As a result, financial market movements now have greater significance for pension funds particularly because of the mismatch of assets and liabilities, and the fact that these have moved in opposite directions in recent years. Equities are now under scrutiny as an asset class.

Pat then considered the question of how the mismatch can be eliminated, noting that assets to truly match the liabilities are simply not available and, even for those seeking an approximate match, there is limited availability of index-linked gilts. He went on to say

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Pensions in 2004: Challenging

that actuaries are deeply embroiled in this question as mismatch equals increased risk, so this is an area where our expertise can be applied.

Pat concluded by offering his thanks to those involved in consultation over the past 18 months on the statutory funding standard and improving guidance, and noting that this seminar was another step in the consultation process. Finally, he welcomed Dr. Garrett FitzGerald (the chairman) and the various speakers, and noted that he was looking forward to the seminar himself.

Chairman's opening remarks

Dr. FitzGerald started by describing himself as an atypical pensioner. As a former politician, his pension increases in line with the pay of politicians, which has increased rapidly in recent years.

He went on to consider a few points on Ireland's demography, noting that we have a unique demography, arising from the country's history of emigration, even amongst the children of former emigrants who returned to the country.

To illustrate, Dr. FitzGerald looked at the history of those born in 1926, as he was himself. By age 35, some 50% had either died or left the country, with emigration being by far the more significant factor in depleting numbers. In contrast, almost 77% of those born in 1967 survived, in the sense of being alive and living in Ireland, to age 35 (in 2002 – for those readers without a calculator close to hand).

The situation is quite different now with a big return to Ireland in recent years and non-Irish born coming to the country, leading to net immigration. As a result, the population mix is changing fundamentally as time goes on. However, the future mix depends on birth trends.

Statistics show that the birth rate increased by 26% in the period from 1995 to 2002. Interestingly,

estimated statistics for 2003 show that 11% of births were to women who "popped" (his word, not mine) into the country for the birth, presumably to obtain citizenship for the child. Even taking account of this, the birth rate has increased some 12% on 1995 levels. Dr. FitzGerald continued by making some observations on the recent history of infant mortality and expectation of life, both of which have shown similar patterns of development relative to the EU experience. In relation to infant mortality, while it improved significantly between 1960 and 2001, the relationship to the EU average deteriorated over the same period from 85% to 126%. Male expectation of life over the period improved in absolute terms but fell from 101% to 97% of the EU average. For females, expectation of life again improved in absolute terms but fell from 98.6% to 96.4% of the EU average.

All of these factors will contribute to the future development of the country's demographic profile and growth rates, and hence ability to support pension provision.

Should Pension Funds Invest in Equities?

Stephen Cooper, Managing Director of UBS and an accountant by profession, approached this question from the perspective of the valuation of a company and how pension schemes should be taken account of in such a valuation. He presented the case that from a shareholder value perspective, the appropriate equity allocation for a company sponsored defined benefit pension scheme should be zero. This concept is not new – a paper by Fisher Black in 1980 proposed that all corporate defined benefit pension schemes should switch to 100% bonds. More recent financial economics research from the actuarial profession has added weight to this proposal, but its practical application is very limited (UK company Boots being the only large scale example).

Stephen's proposal was based on a few key assumptions:

- a pension fund should be seen as effectively assets and liabilities of the sponsoring company with the associated risks and rewards of ownership.
- employee interest is primarily in the pension promise and security of that promise. Any gains from investment returns mostly accrue to the company.

He presented the case against equities, from a shareholder perspective, in three stages:

- 1 Equities offer less – the value of equity investment is less than often thought when one allows for higher risk as well as higher return.
- 2 Equities offer nothing (irrelevancy concept) – pension fund equity returns have the same 'value' to shareholders as bond returns.
- 3 Equities actually reduce value – equity investment is inefficient in that it prevents the company from using tax advantageous financial leverage.

Stephen then expanded on these stages in detail. The irrelevancy concept for asset allocation means that investing pension scheme assets in equities is no different from direct equity investment by the company – equities merely leverage the position of the shareholders. The cost of pensions does not depend on the funding method (ignoring tax) – the cost is the cost but may be supplemented by profits from another source, i.e. equities. Investment in equities is only an attempt to subsidise the cost of pensions but has associated risks. The higher profit, EPS and potential higher cash flow due to equity funding does not indicate added value. Also, despite the potential subsidy, there is a strong argument that companies should focus on their own business and not on how to invest the pension fund's assets.

The argument that equity investment destroys value is based around the taxation issue and the potential for "benefit leakage". From a shareholder perspective, it would be better to replace pension leverage

the Status Quo continued...

with more tax efficient financial leverage within the company's own capital structure. "Benefit leakage" occurs where there are benefit improvements due to the good investment performance from equities – in these cases equity investment by pension funds are a one-way bet for companies.

Stephen did acknowledge that there are still reasons why pension funds invest in equities, not least of which is that the out-performance of equities could add value. He believes that these reasons are questionable though given the associated risks.

He then went on to consider why, given such strong arguments against pension funds investing in equities, significant sales of equities were not occurring. Reasons why this is not happening include:

- the key assumptions outlined at the start may not be true in practice
- it may be practically impossible for large funds to adopt a zero equity strategy
- the potential cash savings from equities are real whereas the associated risks and cost of capital are less quantifiable
- companies are reluctant to adopt a strategy that has a negative effect on EPS (even though shareholder value may be increased).

However, the current pensions climate is providing catalysts for change from the usual investment position which includes equities. Maturing pension schemes mean that pension funds would be considering more bond investments to match the liabilities. Companies are becoming much more aware of the economics of pensions and the risks associated with equity investment. The reasons for investing in equities will be less relevant with the changes in the accounting standards for pensions that are taking place – this is probably the most significant development.

Conclusion

Stephen's main conclusion was that biased accounting is seen as holding

back the more appropriate investment in bonds – biased accounting unduly rewards companies investing in equities by disclosing a higher profit while concealing the equity risk. He also highlighted that changes to the current standards for accounting for pension schemes is highly likely and believed that this in itself may be sufficient to prompt a change in attitude amongst corporates.

Financial Economics - The Theory is Better than the Practice

Tim Gardener opened by explaining that he would not be presenting on the original subject allocated to him (Global Investment Trends) as he felt that there were no discernible trends at present. The new title for his presentation was "Financial Economics – The Theory is Better than the Practice".

By way of introduction, Tim said that he disagreed with the conclusions of financial economists in relation to pension fund investment. His three main criticisms of financial economics were that it is based on questionable assumptions, takes little account of behavioural finance theory and is too absolute. In his presentation he would elaborate on each of these in turn.

The financial economist's view of pension fund investment was summarised as follows:

- A pension fund is a series of cashflows which can be matched by bonds.
- The sponsoring company is exposed to risk to the extent that its pension fund is invested in equities.
- The company should take risks in its own business and not in equity management.
- Equity exposure through a pension fund is inefficient relative to holding directly.

Tim noted that the above conclusions arrived at by financial economists have had very little impact on pension fund investment anywhere in the world although there have been

some high profile exceptions, for instance in the case of Boots. Some of the assumptions made by financial economists were listed:

- Equity investment offers limited benefit.
- Asset allocation is irrelevant.
- Equities reduce shareholder value.

Tim's first criticism of financial economics was that these assumptions are questionable:

- Empirical evidence suggests that equity markets trend and then revert and therefore, provided short term volatility can be tolerated, equity investment will result in a risk premium. The evidence is therefore that equity investment reduces cash costs.
- Asset allocation is not irrelevant as equity markets are not efficiently priced. This is because equity investors are a heterogeneous group with different needs, time horizons and definitions of risk. For example, pension fund investors may have long term horizons and price relative to bonds/overseas equities with variable directional need. Individual investors, however, have short term horizons and price relative to cash with a directional need affected by fashion.
- In relation to the point on shareholder value, equity investment does leverage the company's performance but there is little evidence that investors are concerned by this.

The second criticism which Tim made in his opening remarks was that financial economics takes little account of behavioural finance theory. He then elaborated on this point:

- There is insufficient data to prove any investment theory quantitatively and investment fundamentals are constantly changing.
- Analysts do not all act rationally.
- Very few corporate decision makers take a holistic view.
- Shareholders do not have a risk/return focus.

continued

Pensions in 2004: Challenging

The third and final criticism which Tim had was that financial economics is too absolute. From Tim's point of view, experience suggests that accepted practices are neither 100% wrong or right. Financial economists suggest that we are 100% wrong but they are unlikely to be 100% right. Tim finished his presentation by making a number of points and recommendations:

- Full investment in bonds would make many pension funds too expensive to finance.
- All the evidence suggests that equities will provide higher returns in future.
- The equity risk premium will vary over time so strategic asset allocation should be dynamic.
- We should not invest in equities if short term price volatility cannot be tolerated.
- Markets are not efficiently priced and smoothing helps to eliminate some of the noise.
- Smoothing allows the long term investor to remain focused on the long term.
- Actuaries should continue to smooth asset values for the purposes of contribution rate calculations.

Comments and Questions

Following two excellent presentations, the Chairman invited delegates to make comments and pose questions to the speakers. There was some discussion of the appropriateness or otherwise of companies investing in equities. Stephen Cooper noted that he is not against this when it is an integral part of a company's business, for example in the case of an investment trust, but is against companies investing in equities indirectly via pension funds, and gave as an example General Motors whose business is manufacturing automobiles. He later noted that the end result of indirect equity investment is effectively cross shareholding. This is similar to the situation which has existed in Japan for many years, for which that country has been widely criticised and put under pressure to reform.

There was discussion of the profession's role in the debate. One

speaker expressed the opinion that to date there has been nothing produced by the profession on this question, and that there has been too much emotional rather than considered argument.

Tim Gardener noted in response that it is difficult to say what actuaries should or should not do, but in his opinion the UK profession is "running scared" and it would be preferable for the profession to be bold and assertive.

Stephen Cooper accepted that this is a big debate for the profession and the wider financial community. He would like to see more done on practical issues such as suitable investment classes and developing new investment classes. He felt that smoothing would be a backward step because the discounted dividend model (DDM) is based on assumptions, and while the market is not efficient, he asked can the profession really produce a DDM that is better than the market?

Tim Gardener further commented that he is in favour of smoothing as using market values places too much emphasis on results on a single day. Smoothing, even over one year, is more appropriate for pension funds.

The debate moved on to consider the use of a risk premium in valuing liabilities. If the discount rate used in valuing the liabilities reflects an equity based expected return, then should the liabilities be increased to reflect the higher risk associated with equity investment? The panel's opinion was sought on this point.

Stephen Cooper argued that using a higher discount rate to reflect equity returns is inappropriate. He believes that the value of liabilities is the same irrespective of the investment strategy.

Tim Gardener noted that in practice the question arises as to what do you perceive that risk to be? This depends on the corporate sponsor of a pension fund. One company may be better able to cope with the risk than another in the sense of being in a position to absorb a deficit if one should arise.

Another speaker raised the question as to what does "valuation" mean? If we accept that the value of benefits depends on investment outcome then the benefit promise cannot be absolute. An example is the practice of granting discretionary benefits such as discretionary increases. This practice was more common in the past but has changed over time in the UK and here, partly to recognise an element of risk sharing between the employer and the employee. If we do not accept that the value of benefits depends on investment outcome then we will end up with lower levels of benefit, which is not to anyone's advantage.

Stephen Cooper commented that the with-profit type of approach to benefit provision, which was more common in the past, justified equity investment. Now, the more that is guaranteed, the more the liability is bond-like, which undermines the argument for equity investment. The discretionary approach, where investment strategy has a direct impact on members' benefits, is still operated in some countries.

Following a short break, the seminar resumed with a further two presentations.

Advising Members of Defined Contribution Schemes

Brendan Kennedy began his presentation by pointing out that there are now over 500,000 people in Ireland in Defined Contribution schemes or Retirement Annuity Contracts. Whilst these people are now being presented with a greater choice of funds in which to invest, the vast majority will not be aware of the possible consequences of these choices on their future income.

With companies continuing to move from Defined Benefit to Defined Contribution schemes and the level of coverage increasing through the likes of PRSAs and increased disposable income, this problem is only likely to increase. He warned therefore, of the need for discussion regarding advice to be given to members of Defined Contribution schemes.

the Status Quo continued...

Current Advice

For many years the Managed Fund route has been the preferred advice for DC members with a Lifestyling Option being made available in more recent years. The drawback with the Managed Fund is the variation in year on year returns. Over the past 5 years average Managed Fund returns have moved between +20% and -19%. The aim of Lifestyling was to minimise the impact of encashing funds at a particular point in time. The assumptions underlying the Lifestyling option which must hold for it to make sense are

- Equities give better returns than fixed interest or cash
- Investment of contributions is seen as long term, not short term
- Long term is 10+ years

Brendan added that it is not clear how well these assumptions hold out in practice. For somebody contributing to a DC scheme over 25 years, the weighted average saving term is just 7 years. Is that too short a period for a reversion to mean and does it suggest we should be recommending a lower equity holding? Should pension investment become more defensive?

With just 80 years investment data available to project the next 40 and with the significant difference in markets in the 50's, 60's and now it is questionable how statistically credible any results can be.

In all of this we need to consider the priorities of a DC investor. Most investors will want security, the knowledge that there will be sufficient funds to provide them with income in retirement. They will expect real returns and stability in contributions.

Alternative Investments

If people are to reduce their equity holding what possible alternatives are open to them?

- Are Index Linked bonds a viable option or what about Euro zone bonds? They are not completely risk free but may be better than the alternatives.
- Would it make sense for people with mortgages to concentrate on paying this off first or will they benefit from greater equity returns?

- In looking at an individual's exposure to equities should we also consider any holdings they may have in work share schemes?
- And finally what is the correct asset mix for a DC scheme?

There is no right answer to these questions and advice will vary from member to member.

Advising Clients

Given the numerous and complex issues to be explained to clients, it is important to structure our advice in the best possible manner. This may not be easy for a number of reasons:

- Clients may have very little knowledge or understanding of the issues involved.
- Clients may have short attention spans i.e. most documents get read but none finished.
- Many people will not have an understanding of their own attitude to risk.
- We all want big wins, all the time.
- People will always compare how they did with the best performers in the market, irrespective of the reasoning behind their choice.
- People may be unwilling or unable to pay for individual advice.

These factors raised the argument for a default investment fund for all DC schemes as they can be set up and implemented with relatively little or no cost. The default option could be based on a modified PRSA model with an investment strategy that, if not correct for everybody, could be justified on objective grounds.

Where now for the Defined Benefit Model?

Eamonn Heffernan closed the day's speeches with a presentation on his views for pension provision for the future. The main theme of the presentation was that while we have a sound pensions model in Ireland, as it currently stands, the current defined benefit (DB) model is not sustainable. In addition, the present legislative regime is complex, costly to administer and in danger of strangling DB schemes. In looking at alternatives going forward, as well as looking at security and affordability, we also need to consider opportunities to simplify the current regime.

The story so far

Current pension provision is broken

down into three levels - State Pension, Occupational Pension and Private Savings.

While everyone currently has a DB promise in the form of the State Pension, Eamonn noted that around 50% of employees in Ireland do not have any private provision.

Within the occupational sector, the typical DB scheme has emerged (with little change) over the years as exclusively final salary, integrated with the State benefit, with a fixed employee contribution and the employer meeting the "balance of costs". Most schemes look at long term commitments and historically solvency has taken a back seat. Eamonn outlined that the typical asset distribution as at 31 December 2003 had pension schemes invested 73% in equities. Invariably this means some allowance for an equity premium is being made in the funding of pension schemes.

How did we get here?

Historically, in the days of little supervision and regulation, despite the volatile markets the relatively young pension schemes ticked along nicely.

As Eamonn pointed out, the last two decades have seen many changes with an increase in DC type arrangements and steps towards preservation of benefits and security. In a time of surpluses, bull markets and relatively high bond yields this presented few problems. However, recent years have painted a very different picture for many schemes. A number of factors have played a part:

- Maturing Schemes
- Fall in Bond Yields
- Volatile Equity Markets
- Improved Life Expectancy
- Extension of Preservation and the Minimum Funding Standard (MFS)
- Annual Solvency Reporting
- Volatile Cash and Accounting Costs

In all, this has resulted in the current environment where approximately 50% of schemes are unable to meet the MFS with wind-up liabilities close to or above the ongoing liability value. In most cases, employers are looking at a substantial increase in contributions to address the issue, with alternative investment strategies being considered in addition to alternatives to DB provision. **continued**

Pensions in 2004: Challenging the Status Quo continued...

In many cases employees may not even be aware of what is going on.

Another key concern emerging is how changes in the pension scheme numbers now affect the Company balance sheet and profit and loss figures. Companies preferring to limit the impact of changes in the scheme's finances on the company accounts may move more into bonds. In turn, the cost of investment strategy may result in increased costs and contributions which make the current DB promise unaffordable.

Therefore, Eamonn proposed that the current DB model is not sustainable.

Designing the way forward

Eamonn went on to suggest that while we cannot remove the risk inherent in pension provision, looking forward, we could look at ways to redistribute the risk between employees and employer (rather than the employer assuming all the risk with a DB scheme). In terms of scheme design a number of alternatives could be considered such as career average schemes or hybrid mixes of DB and defined contribution with DB provision after a certain age or up to a certain minimum income.

Absolute security is absolutely unaffordable. What are the alternatives?

Changing the design of future pension arrangements will not have any immediate impact on the current issues faced by employers and schemes. The funding objective needs review – a bond focused wind up standard cannot stand up alongside long term costs determined using higher equity returns.

Eamonn suggested that we either prioritise a long term (ongoing) or short term (solvency) approach. While the two are not mutually exclusive, trying to do both is impossible in financial terms.

The short term solvency approach will inevitably point to employers seeking less volatile assets, pushing costs up but with more stability. DC or reduced levels of DB may become the only alternative. A longer term horizon with smoothed asset values and less volatile funding levels would keep contributions more stable with

variations dealt with over the long term. Under this latter approach, security could be controlled using increased communication and disclosure around actual solvency or "minimum" positions and more prescription around the assumptions used for funding.

This latter long term approach however removes the security for members in the event of an actual shortfall on windup. So, who then pays? Alternatives include the State, the Employer (if solvent), a Solvency Insurance Fund, or the present system with pensioners receiving priority or with some change in the priority rules.

Introducing a debt on the solvent employer may either discourage DB provision and/or the windup of well-funded schemes. The premiums required under a solvency insurance fund may prove difficult to determine and Eamonn added that due regard should be made of the steps taken in the US and currently being proposed in the UK.

Comments and Questions

The seminar concluded with a lively question and answer session. The initial discussion centred on problems with the lifestyle approach to investment. One speaker raised the point that the switch away from equity based investments takes place at a set time rather than taking account of the market situation, so that the lifestyle approach is not a dynamic asset allocation model. In addition, the speaker was of the opinion that the allocation will probably look like a managed fund. Brendan Kennedy noted that some trustees are reluctant to opt for a default investment strategy or indeed any form of strategy because of the risk of hindsight. On balance, he favoured some form of certified default strategy so that some thought has been put into it, but he would not personally agree with a managed fund allocation.

Another speaker raised the point that a default strategy is a "one size fits all" approach which would not take account of everyone's situation, for example some individuals may be able to continue to invest beyond retirement. Brendan Kennedy noted however that many investors will or

may not have access to a drawdown option, and that the benefits of continuing to invest post-retirement are outweighed by mortality risk.

A further point was made from the floor that current products available generally have a wide range of asset allocation options, and that these products were designed for sophisticated investors. The speaker suggested placing a limit on pension fund asset allocations, as a form of safeguard to protect less experienced investors. Brendan Kennedy agreed that there is a good case to be made for limiting asset allocations to a particular asset class. He believed that it is appropriate to legislate for the majority, even though this may also restrict a more experienced investor.

Moving on to the defined benefit model, Eamonn Heffernan was asked for his opinion on whether trustees are the appropriate people to have ownership of asset allocation – is the trustee structure correct? In response, Eamonn Heffernan expressed the view that the trustee structure is outmoded. The employer carries risk in a balance of cost scheme so it seems odd that the employer is not making the investment decisions. The employer has input into the investment decision making process but not total control. In the future we may see the situation where some of the investment decisions are removed from the trustees, but the general concept of trusteeship remains in place.

Finally, the question was raised as to whether the Society is doing enough to provide leadership on this point. It appeared to the final speaker that all of our skills are being used to identify the problems rather than the solutions. Eamonn Heffernan accepted that this was a valid point but we do have to identify the problem first. However the Society could and perhaps should do more. For example, on the question of sharing risk, the debate is polarised between defined benefit and defined contribution. This is an opportunity for the Society to contribute and look for other solutions, for example career average.

Anna Kinsella, Ciaran McGrath, Mark O'Dea, Emer Reid and William Short



Drostan Grant, R.I.P.

(1956 - 2004)

The recent death of Drostan Grant, in tragic circumstances, came as a dreadful shock. We are all diminished by the loss of this exceptional and lovely man.

Drostan was born in Scotland in 1956, the youngest of five children of the late Sir Duncan and Lady Grant. His father was a baronet and his mother the daughter of the last Cope baronet. Drostan was very interested in, and knowledgeable about, his distinguished ancestry, particularly on his mother's side. The Copes were descended from the treasurer of Henry VII and an ancestor was one of the first baronets created, during the reign of James I. Despite this aristocratic background, Drostan was the most unassuming and least snobbish person you could meet, with an interest in everyone and a friendly word for all.

After the early death of his father, the family moved to Ireland where the Cope family long had connections - Cope St. in the Temple Bar area is named after another ancestor. Drostan went to school in St Conleth's, Ballsbridge and afterwards to University College, Dublin where he graduated in Civil Engineering. He later completed an MBA in Trinity. He then decided to take up Actuarial studies and joined the firm of SKC Pension Consultants in Dublin working with Victor Armstrong. In 1987 he moved to Abbey Life as a pensions actuarial specialist, and transferred to

Canada Life when that company acquired Abbey in 1992. He later moved into corporate actuarial work and became an expert in the intricacies of Canadian basis reporting.

As his friend Colm Mulcahy said at his funeral service, Drostan was a perpetual student by nature and in the actuarial profession found the perfect match. Many of us could identify with this. He completed all but one of the exams, but when the Institute added an extra exam he decided he had done enough, and got on with his life.

Drostan had an extraordinarily wide range of interests and enthusiasms. As his brother Patrick said in his funeral tribute, he had an inquiring mind. He was interested in history, literature, travel, languages and religion to name but a few. He also loved music and played the violin. He loved nature and kept fit by vigorous walking. One of my pleasures over the years was to accompany him occasionally on his daily walk around Blackrock Park. We would talk about the most obscure but interesting things, Drostan's treasury of information a constant delight.

He had a particular interest in Eastern Europe and especially Greece having, along with his mother, converted to the Greek Orthodox faith in 1976. He was a devout supporter of the Church, and its treasurer up to his death. In recent months he had been

particularly active in the refurbishment of its church at Arbour Hill.

His funeral service on Monday June 7th was held in this small church and the crowd of family, friends and colleagues overflowed out of the church into the courtyard and onto the street. It was a beautiful day and a beautiful service, the music supplied by his friends from the Church. The tributes by his brother, his old school friend, and Father Ireneu Craciun, his spiritual father, were eloquent, affectionate and moving and seemed to catch the spirit of the man and his different facets exactly.

All our thoughts and prayers are with his wife Celia and daughters Antonia and Christina, whom he adored and who will miss him terribly. May his gentle and noble spirit rest in peace.

John Lyons

Two Major Issues for the Profession;



Pat Healy, President, Society of Actuaries in Ireland, Mike Lombardi, President, Canadian Institute of Actuaries, Barbara Lautzenheiser, President, American Academy of Actuaries

The Society's evening meeting on the 13th May saw two presidents address the Society, Barbara Lautzenheiser, President of the American Academy of Actuaries, and Mike Lombardi, President of the Canadian Institute of Actuaries. Barbara spoke on the topic of Gender Neutral Pricing, which is currently the subject of a draft Directive from the European Commission. Mike spoke on the Canadian experience of Peer Review, which was recently made mandatory for (Life Insurance) Appointed Actuaries in Canada. It was a full house, with many past Presidents of the Society in attendance and the topical subject of the talks made for an interesting evening's discussion.

Gender Neutral Pricing

Barbara began by outlining her central argument, that gender neutral pricing must be seen as a threat to the concept of risk classification as a whole. She argued that if the right to use one form of risk classification is removed, then the right to use other forms also comes under threat. The title of her presentation summed it up as "Gender Neutral Pricing - a

domino effect on risk classification."

Focusing on the specific issue of gender neutral pricing, Barbara outlined her own experience in fighting similar proposals that surfaced in the US in the early 1980s. The proposals were defeated then, but not without a fight. The arguments in favour of the proposals back then are not dissimilar to the arguments being proposed by supporters of the European Commission directive now e.g.

- Gender categorisation is merely a proxy for other criteria e.g. lifestyle, socio-economic status, marital status, nutrition habits and so on. Barbara argued that although all of these may have an impact on mortality, most of these criteria are subjective, are not based on verifiable facts over long periods, and are changeable. Indeed there are studies that show when the impact of other factors has been removed using statistical methodology, the gender differential in mortality rates not only remains but widens.

- A theory which suggests that the death ages of the vast majority of males and females overlap, and that it is only the death ages of a minority (long-lived women and short-lived men) that dictate the price for everyone.

Barbara noted that a common argument against specific types of risk classification was the idea that if people cannot influence the specific risk factor (i.e. it is not their 'fault'), then they should not be penalised for that. Barbara strongly challenged this by outlining that risk classification is fact not fault based. It should classify risks into groups based upon the expected cost or benefit or providing the particular cover. When based on observable data, it represents equity, or what might be termed 'fair discrimination'.

Equity not Equality

From a pricing point of view, Barbara argued that this 'fair discrimination' is what is required. The fundamental issue is one of equity, and this does not necessarily mean equality. Pricing that most accurately reflects the costs produces the greatest availability in the marketplace. In the absence of equity in pricing, there is a spiralling effect i.e. in a non-compulsory market the lower risk people gradually stop buying insurance (or obtain it in a jurisdiction which does not have gender neutral pricing) and gradually the cost spirals to the cost of the highest risk group.

Where do we draw the line?

The discussion then was opened to the floor and touched upon the issue of where we should or could draw the line on risk classification? Barbara outlined that gender neutral pricing would work in a social system with full participation, but not in a competitive free market system. Some speakers noted that we already work with

Governance and the Gender Discrimination Issue

constraints on risk classification. For example, there are potential rating factors which society would deem as morally unacceptable. Health insurance in Ireland is community rated. Is the removal of gender as a rating factor simply another constraint we will have to live with?

One speaker mentioned that the challenge to gender differentials in pricing is only the latest in a series of such challenges to our traditional methods of risk classification. Recent examples include the moratorium on the use of genetic testing results in underwriting, and proposals to forbid the use of family histories in underwriting. What is next on the cards? Although it seems clear the challenges will be fought, if they are lost do we need to learn new ways to accommodate these constraints, or will some of the current product range actually disappear? Barbara proposed a very strong defence of the principle of risk classification and reaffirmed her point that losing on this issue could well leave the door wide open to other challenges.

Canadian Peer Review

Mike Lombardi gave us an account of the Canadian experience with peer review. There were more than a few parallels with our own recent experience. As peer review is now mandatory for life insurance appointed actuaries in Canada, it was instructive to hear the Canadian experience and perhaps further the debate as to where we are headed in Ireland.

Peer Review was essentially kicked off by the life insurance regulator in Canada in the mid 1990s, who expressed a view that the then reliance on one person (the Appointed Actuary) to certify reserves might be enhanced and made more transparent by a process of peer review. In response, the profession set up a

taskforce to investigate their options. They considered if a standard was needed in this area. As a framework for this, Mike outlined the criteria that the Institute uses in considering the adoption of standards:

1. There is a need for the standard.
2. The standard has to be within the actuarial domain.
3. A competent actuary must be able to comply with the proposed standard.
4. The standard must have general acceptance within the Institute.
5. The standard must be in accordance with actuarial principles.
6. The standard must be in the public interest.

The taskforce agreed that a peer review standard would satisfy these criteria, and proposed that a standard be introduced for actuaries in all disciplines (in their statutory roles), and not just life insurance actuaries. This proposal naturally widened the net of opinion.

The subsequent response from the profession took some time to be worked through. Amongst the various objections to mandatory peer review included:

- Insufficient need
- Significant cost and time overheads
- Review should be left to the regulator
- Client confidentiality issues
- Some particular issues for small firms and consultancies

The regulator's response to this discussion was to commission independent random reviews of the work of Appointed Actuaries, the cost of which was met by the insurers. In response, the profession then proposed what was to be known as a practice review. This produced a

standard for peer review, which was made mandatory where an external peer review is requested by a third party. Although the standard left some issues open (e.g. should the peer review be pre-release, or post-release?), it was clear on some other points. For example, if disagreements arise, they are put to arbitration in the first instance rather than back to the third party. It is also clear that the reviewer must be external to the firm of the actuary being reviewed.

In the end, it was the regulator who mandated peer review for life insurance Appointed Actuaries at the end of 2002. From that date, external peer review was required for reports prepared by Appointed Actuaries as part of their statutory duties. Mike noted that the regulators in other practice areas are now taking interest in this.

The discussion was then opened to the floor. On the question of how prescriptive the practice standards are, Mike outlined that the guidance notes were in general principle-based. Barbara Lautzenheiser suggested that the existence of peer review is likely to lead to less prescriptive guidance. The issue of director responsibility was also raised. Mike confirmed that Directors still have responsibility for financial statements but they rely on the Appointed Actuary and Auditors in a similar way to the current system here. As a final comment on peer review, Mike noted that the introduction of peer review was essentially driven by the public's need for reassurance that financial institutions were being adequately supervised, and that this need is unlikely to go away.

Francis Coll

The End is Nigh by Shane Whelan

Lost Money

In these days of frustrating markets, it is consoling to ponder the very weak – arguably non-existent – relationship between intelligence and stock-picking. Isaac Newton, the greatest scientist of all, notoriously sold early in the South Sea Bubble of 1720 after doubling his investment and remarking, somewhat smugly, that he could “calculate the motions of the heavenly bodies but not the madness of people”. But he was tempted back in again a few months later when he saw the market continue to climb exponentially. He bought at the top of what was probably the worst stock-market crash on record, losing a fortune of £20,000ⁱ.

It could be the End of the World

The challenge of modelling the madness of crowds has been taken up by many disciplines in science and by even more pseudo-sciences over the intervening centuries. Physicists, though, have only started to study this phenomenon but are quickly catching up, judging by some notable successes and worrying predictions. Didier Sornette, one of the leaders in the emerging discipline of econophysics, claims to detect log-periodic oscillations decorating a super-exponential trend in key long-term demographic, economic, and financial series that, when extrapolated, explode to infinity in about the year 2050ⁱⁱ. In short, he predicts the end of the world in or about the year 2050. Remarkably, this date coincides with Newton's conclusion from studying the Bible, when he settled on the year 2050 as the starting date for the everlasting reign of the Saints of the Most Highⁱⁱⁱ.

Econophysics

Sornette is part of a movement of physicists modelling economic systems using techniques and concepts

developed in studying the out-of-equilibrium dynamics of complex systems. The movement was named ‘econophysics’ in 1997 by H. Eugene Stanley, but can be dated from 1991 when a leading physics journal, *Physica A*, began publishing papers on this topic. A sub-group of these econophysicists specialise in studying capital markets (a sub-discipline that has come to be called ‘phynance’, which has maintained its own dedicated journal from 2001, *Quantitative Finance*) and along with Sornette and his research team, other centres of excellence in phynance have sprung up about Stanley, Sorin Solomon, Rosario Mantegna, and Doyne Farmer (all of whom maintain excellent websites). Some have even given the research a commercial edge with companies such as the Olsen Group, Science & Finance, and The Prediction Company developing practical trading or risk control models to exploit the perceived opportunities. Outside of Peter Richmond at Trinity College Dublin and Neil Johnson at Oxford, the movement has not yet gained much of a following on these islands.

In the beginning, there is data

Econophysicists, in contrast to financial economists, begin with data – huge quantities of data. Their studies into financial markets typically analyse several million price changes – capturing, say, every price change every minute over the last couple of decades or every bargain on every equity over a couple of years. Several empirical regularities in the price formation process are now documented that shed light on the way speculative prices evolve (see box). These empirical regularities or stylised facts are observed in markets as diverse as commodity markets, currency markets, cash, bond, equity, and property markets and seem to be

Empirical Regularities Detected in Returns on Capital Assets^{iv}

- (1) Return series are non-stationary. Past returns are really not a guide to future returns and all those stationary models (e.g., the ARMA and ARCH models) will eventually fail.
- (2) There is little or no correlation between successive returns.
- (3) Returns come from a heavy-tailed distribution, where the variance exists but the kurtosis (4th moment) does not. Further, even when volatility clustering is removed, the declustered residuals still exhibit heavy tails (although somewhat less heavy than the original returns). Volatility tends to cluster in time, and the decay from high bouts of volatility tends to follow a characteristic power-law.
- (5) Others, for example:
 - a. The correlation of the current return to future volatility is negative, decaying to zero as time increases.
 - b. The correlation between volume traded and volatility is high.
 - c. There is an asymmetry between large positive and negative movement, with the latter more frequent.

present no matter how frequently or infrequently prices are sampled. That is, the same patterns observed in asset price returns measured over every ten minutes appear when returns are measured in months.

The empirical regularities can be used to characterise the evolution of asset prices or, equivalently, the returns from capital assets. We know that active trading leads to these patterns in all capital markets and so the detail of the dealing structure must be irrelevant. Further, the same regularities are observed irrespective of the time interval between prices, so the institutional structure of the traders must also be irrelevant. Taking a short leap, we might conclude that, as the resultant patterns are the same, the forces giving rise to the patterns must also be very similar. That is, pension funds investing in equities over decades are participating in essentially the same game as intra-day traders acting on minute movements of the dollar-yen market - the principal difference being the former is played out in excruciatingly slow slow-motion.

Agent modelling

So what is common to all the different capital markets over any time period and characterises the trading process? John Maynard Keynes, no mean investor himself, described it well: "The actual, private object of the most skilled investment to-day is to 'beat the gun', as the Americans so well express it, to outwit the crowd and to pass the bad, or depreciating, half-crown to the other fellow". So the game of professional investment is a "battle of wits to anticipate the basis of conventional valuation a few months hence...For it is, so to speak, a game of Snap, of Old Maid, of Musical Chairs...". Physicists take this metaphor rather literally and have modelled markets as a game played by similar players ('agents') that can

only be won by a minority of the players ('minority game').

This sort of modelling invites parallels with the Boltzmann-Maxwell reduction of thermodynamics to elementary mechanics, modelling thermodynamic properties as the simple aggregate of many simple collisions between many similar billiard-ball molecules. And just as Boltzmann was lead to the surprising Second Law of Thermodynamics – the irreversibility of time – when contemplating the aggregate of these time-reversible collisions, the econophysicists are reporting some surprising consequences of agent modelling in minority games.

First, such agent models can replicate many of the 'stylised facts' above that characterise asset price evolution. Second, they suggest that (as J. P. Morgan memorably remarked when asked what the market will do) the market will fluctuate – the equilibrium they reach is dynamic as the price is expected to change even in the absence of new information. Third, when markets reach what looks like a dynamic equilibrium, there remain exploitable patterns.^{vi}

This latter argument is wonderfully general. Let us say all agents record the last m changes in price as simply up (1) or down (0). Now a trading strategy is a mapping from the set of all m -tuples of 1 or 0 into the indicator set 1 (meaning next trade is a buy as expect upward movement) or 0 (meaning next trade is a sell as expect downward movement). There are 2^m elements in the domain, and each element can be mapped to either a 1 or 0. Accordingly, there are 2^{2^m} such mappings. Each agent selects from a pool of n strategies and, say, there are A agents in total. So there are somewhat less than $n.A$ strategies actually being played while the total universe of strategies is of the order of

2^{2^m} . Now, for any plausible numbers assigned to m , n and A , we find that 2^{2^m} is several orders of magnitude greater than $n.A$. (For instance, with $m=12$, $2^{2^{12}} \gg 10^{1200} \gg 10^{1000} \cdot 10^{10}$ which is significantly greater than the current best estimate of the number of elementary particles in the universe times the number of humans alive at the moment.) Hence the actual number of strategies being played is a negligible proportion of the total number of all strategies. Finally, put in operation some evolutionary mechanism that ensures the population of successful agents prosper while the unsuccessful ones perish, and we find that the evolutionary mechanism emphasises some strategies more than others, leading to small biases in the original population being magnified in the surviving population. These biases create patterns in the future evolution of the price, induced by the not-so-random surviving trading strategies.

More speculative agent models are reporting that trend following rules induce trends but with an oscillatory feature, which favours different trend following rules and, surprisingly, not all value strategies push market values closer to fundamental value.

Self-organised criticality

Agent modelling is just one approach the econophysicists have brought to a new level of sophistication. It could not, though, forecast the end of the world. Sornette takes another approach. Rather than drawing parallels between the stock market and games, he finds parallels with many natural phenomena – specifically those phenomena with a large number of interacting parts with feed-back, which typically can self-organise and perhaps make a sudden transition to a new state or phase (e.g., evolution, epidemics,

continued

The End is Nigh Continued...

earthquakes, ferromagnetism, weather, ecology, ruptures). He attempts to forecast these points of 'self-organised criticality'. In attempting to estimate the point of rupture of pressure tanks in rockets, he claims to have detected some tell-tale signs of the approaching rupture – log-periodic oscillations about an underlying trend – that throws the trend into sharper relief, thus allowing it to be extrapolated. Sornette has applied this approach to stock market indices and demographic, economic and other time series to detect a trend and make predictions. True, this is making a rather heroic generalisation but, as pointed out by Maury Osborne (who, with Louis Bachelier and Benoit Mandelbrot, is one of the great forerunners of the econophysics movement), speculation in science is always in the best tradition of Chicken Little.^{vii} Inevitably, not all Sornette's forecasts have proved correct but, unlike Chicken Little, he can claim some notable successes - in January 1990 Sornette forecast that the Nikkei would rise 50% by the end of the year (it rose just over 49%) and he also forecast the NASDAQ would crash in April 2000. Maybe the sky is falling.

The econophysicists approach in general, and Sornette's in particular, see speculative markets as just another instance of a much more general phenomenon – game-playing or some complex natural phenomenon. This fresh perspective already adds value. Their empirical emphasis has squeezed some universal regularities out of the process of price evolution that have helped characterise the process of speculation. Some econophysicists, such as Bertrand Roehner, have taken to collect data on such related markets as regional wheat prices over previous centuries and on prices of collectables such as rare books, coins, stamps, and baseball cards.^{viii} Sornette and

others claim data on many natural catastrophes are relevant to predicting stock market crashes or bubbles – being just a different manifestation of the same underlying phenomenon. More data, and more novel ways to analyse it, must accelerate the growth of our knowledge of the perplexing behaviour of assets.

Doomsday 2050

We are perhaps nowadays more disposed to Sornette's rationale for doomsday in 2050 than to Newton's. But both physicists will be right if the world as we know it ends in or around 2050 – if anyone then cares. And, arguably, both could claim to be right for the right reasons: Newton would doubtlessly have expected no more from the final generations than to use knowledge of doomsday to increase their material wealth.

ⁱ Kindleberger, C.P. (1996) *Manias, Panics, and Crashes: A History of Financial Crises*. Wiley.

ⁱⁱ Sornette, D. (2003) *Why Stock Markets Crash: Critical Events in Complex Financial Systems*. Princeton University Press.

ⁱⁱⁱ Robinson, A.B. (1991) *Introduction to Observations upon the Prophecies of Daniel and the Apocalypse of St John* by Sir Isaac Newton (London, 1733). The Oregon Institute of Science and Medicine, Oregon, US.

^{iv} Cont, R. (2001) Empirical properties of asset returns: stylised facts and statistical issues. *Quantitative Finance*, Vol 1, 223-236.

^v Keynes, J.M. (1936) *The General Theory of Employment, Interest and Money*. MacMillan & Cambridge University Press.

^{vi} Farmer, J.D. (1999) Physicists attempt to scale the ivory towers of finance. *Computing in Science & Engineering*, Nov./Dec, 26-39.

^{vii} Osborne, M.F.M. (1977) *The Stock Market and Finance from a Physicist's Viewpoint*. Crossgar Press, Minneapolis.

^{viii} Roehner, B.M. (2002) *Patterns of Speculation: A Study in Observational Econophysics*. Cambridge University Press.

The Changing Education Structure

I'm sure at this stage we have all heard about the changing education structure but how many of us know exactly what the changes will be. This article looks at the new structure in brief; hopefully it will provide you with more than just good conversation at some actuarial gathering!

From 2005, we will have four stages in the actuarial examinations - core technical, core applications, specialist technical and specialist applications stages.

Core Technical Stage - Broadly similar to the current 100 series except that 103 and 104 have been merged into one, but I'm sure all the 100 series students knew that interesting fact already. One big change here is the introduction of the Business Awareness Module. This module will involve pre course study, a two-day residential course and a post course examination. The module will serve as an introduction to the actuarial profession and the business environment that students will be working in. It is compulsory to all members who join the Institute after 30 June 2004.

Core Applications Stage - This will have three subjects CA1, CA2 and

CA3. CA1 will consist of two papers. CA2 is a course in modelling, yes a course and yes modelling. The aim of CA2 is to ensure that students have data analysis skills and can communicate the results to a technical audience. Then enter everyone's favorite subject 'communications' under the new name of CA3 and this time it's two and half hours long and with two compulsory questions. There is a CA3 specimen paper on the Institute web site.

Specialist Technical Stage - Students have a choice of four out of six subjects. Four of the six are the familiar 302,303,304 and 305, which will now be affectionately known as ST2, ST3, ST4 and ST5 respectively. The two new subjects are Health and Care Specialist Technical (ST1) and Investment Specialist Technical B CiD (Certificate in Derivatives) (ST6).

Specialist Applications Stage - This is the equivalent of the 400 series. You will all be happy to know that this now will be a single 3 hour paper. As in the Specialist Technical Stage, two more subjects have been added onto the menu, Health and Care Specialist Applications (SA1) and Finance Specialist Applications (SA5). Our UK counterparts will be required to sit a second UK specific paper.

All students joining the Institute after 30 June 2004 will be required in addition to the above to keep a log book of work experience and courses taken throughout their professional development.

The issue that concerns most students is about exemptions and what is going to happen in the transitional stage. Throughout December 2004, the Institute will contact each student with a summary of their individual position. But this is not to say wait until December to assess where you stand. I invite you all to go to the Institute web site for more information on the new education strategy and the transitional arrangements being put in place. Indeed a great deal of this article is based on information on this web site.

I hope this has been of some help. As usual comments and questions are welcome. Email me on grace.nyamayi@irishlife.ie

In the next newsletter, Duncan Robertson from the Society's Education Committee will be providing some more information on what the implications of the new exam syllabus might be for the Society.



A Guide to Corporate Bonds

Introduction

Malcolm Jones, Standard Life Investments, enthusiastically presented his paper on Corporate Bonds for Pension Schemes to the Society in the Westbury Hotel on Wednesday 31st March 2004.

The objective of the evening session was to increase the knowledge of Pension Actuaries of an asset class which has become increasingly important to pension scheme stakeholders in recent years. This has been driven to a large extent by a desire of pension schemes to reduce the volatility in their funding level and contribution rate, particularly as schemes mature, and in particular by the requirements of FRS17 to value liabilities by reference to AA corporate bond yields.

Returns and Ratings

Corporate bonds encompass all bonds issued by non government organisations such as companies, local authorities, supranational agencies e.g. World Bank, etc. Corporate bonds offer higher expected returns than government bonds for several reasons; mainly increased probability of default and reduced liquidity. Corporate bonds are rated by credit rating agencies such as Standard & Poors, Moodys and Fitch IBCA in accordance with the perceived probability of default. Investment grade bonds are rated AAA down to BBB while bonds assigned ratings below this level (BB to C) are termed high yield, sub-investment, speculative or known colloquially as junk bonds. AAA bonds have negligible probabilities of default (ap. 0.1%) while bonds below investment grade have increasingly high chances of default. D is assigned to bonds that default. Generally speaking the lower the credit rating, the higher the yield on the bond. After issue, a bond's price fluctuates with the general level of interest rates for its duration and with changes in its

perceived default risk.

The Euro corporate bond market expanded rapidly in the late 1990s as the European Union adopted a common currency and interest rates/inflation fell. As a result many companies turned to the bond market for financing rather than raising equity through a stock market. The euro corporate bond market is dominated (approximately 50%) by AAA rated bonds issued by financials and agencies.

Historic data, particularly in the sterling corporate bond market, confirms that the market rewards investors for the higher default risk associated with investing in corporate bonds. The risk premium above government bonds typically ranges from 30 bps at AAA level to 120 bps for BBB grade. Therefore the total return on a corporate bond reflects the yield on equivalently dated gilts and the credit spread. Changes in the total return can therefore come from three sources: (i) a change in the underlying credit spread e.g. a fall resulting from an uprating of the company's credit worthiness (ii) a movement in the underlying gilt market yield e.g. from reduced fears of higher inflation or more commonly (iii) a combination of (i) and (ii).

Corporate Bond Price Influences

It was highlighted that specific company news can be good news for the equity investor but bad news for the corporate bond investor. For example, a decision by a company to maintain a dividend when profits are depressed can be seen as positive from an equity perspective but negative from a credit perspective as bondholders become concerned about the balance sheet being stretched.

Malcolm presented two interesting real life case studies of what can

influence individual bond prices. The first case study involved the bidding war that broke out for the UK food retailer, Safeway, in January 2003. Morrisons, the UK's fifth largest food retailer, announced an all-share offer for Safeway at a significant premium to the prevailing share price. The equity market viewed the bid favourably as did the bond market. The equity structure of the deal combined with Morrison's strong operating performance and respected management team was expected to lead to an upgrade in Safeway's 2018 bond from BBB+ to A. The expected re-rating led to an increase in the bond price. Further good news followed as other supermarkets entered the bidding war. However, when a private venture capitalist, Philip Green, entered the fray the credit market's view changed. Philip Green's bid would involve taking the company private. This would be financed by increasing Safeway's debt. Higher gearing would lower Safeway's existing bond ratings to single B and put the bond in the 'junk' category. The bond price subsequently fell as the credit spread over government gilts rose. Over the next month (March) the market expected the bids from the competing supermarkets with the exception of the Morrison and Green bids to be referred to the Competition Commission. After all, the purchase of Safeway by Morrison would result in the creation of a fourth 'big player' in the retail sector. The bond price began to recover as the credit spread decreased. However, the market was surprised when Morrison's bid was referred to the Competition Commission while Philip Green's approach was given the green light. The bond credit spread again increased to record highs as bond holders feared the worse. In the end the expected cash offer from Green failed to materialise in the short term and the credit spread gradually fell. By June the Competition Commission

for Pension Schemes

tentatively nodded in favour of Morrison's bid and the credit risk fell as bond holders realised that Safeway would remain a public company. By September, the Morrison bid was cleared and the credit spread reduced further as Safeway's credit rating was upgraded. The story illustrated the roller coaster ride that can be experienced by bond holders as the market factors in the likely impact of changes to how a balance sheet will be re-structured.

The second case study involved UK transport operator, Stagecoach, and illustrated the impact of covenants. Covenants are legally enforceable clauses inserted in bond issues to protect bondholders from the impact of events such as a change in ownership of the company, increase in financial leverage or a restriction on the issue of more senior ranking debt. The Stagecoach example involved comparing the experience of two bonds issued by the same company. In 2000 Stagecoach announced the planned sale of a subsidiary which was a significant cash generating asset. The sale of such a key asset triggered a covenant in the Stagecoach sterling bond which required the company to redeem the bond at the price of the equivalent dated gilt. The euro issued bond did not have such a covenant and its credit spread increased on the back of the sale of such a key asset and the expensive redemption of the sterling bond. Ironically, the best and worst performing sterling bonds in 2000 were issued by the same company.

Pension Schemes and the use of Swaps

As pension schemes mature corporate bonds are being used increasingly for cashflow matching. However, a problem with the bond market is that the total corporate bond market is not particularly large against a potential market demand from pension

schemes, life offices, general insurers and ordinary investors. Another problem is the difficulty of matching cashflows at durations of greater than 15 years.

A practical solution is the use of swaps. The swaps market offers the facility to construct or de-construct financial instruments of very wide ranging complexities. In its simplest form a swap is an agreement between two parties to exchange cashflows in the future. An example is a contract whereby one party exchanges a series of future cashflows determined by reference to a floating rate of interest for a series of cashflows determined by reference to a fixed rate. At time 0 the fixed rate is set such that the present value of both sets of future cashflows is equal. The advantage of using swaps is that the swap market is considerably larger than the corporate bond market. In addition, it is possible to create synthetic corporate bonds with a variety of cashflow characteristics and significantly longer terms. The use of currency swaps further expands the opportunities to avail of credit risk contained in bonds issued in other currencies while avoiding the currency risk. Inflation swaps allow parties to exchange future inflation linked cashflows for fixed payments.

Summary

Corporate bonds are a growing asset class. Investment grade bonds offer additional returns over gilts that more than compensate for the additional risk i.e. the chances of default. The return distribution can, however, be described as asymmetric when compared to government bonds – the expected return is higher but with a downside that is a lot more than the upside. While the downside risk characteristics are similar to equities i.e. potentially a total loss, a key point for investors is that, unlike equities, there is no unlimited upside potential

as the upside is naturally limited by the gilt market.

The development of the swaps market should provide fund managers with a lot more scope to add value by managing currency, credit and interest rate risks separately.

As the world of pension scheme investing is changing it is essential that pension actuaries and trustees understand the risks and rewards that this important asset class offers.

Aidan Kennedy

International News

Groupe Consultatif's e-Newsletter.

The latest edition of the Groupe's e-Newsletter is available at www.gcactuaries.org/news5.html

Groupe Consultatif's Summer School in Lithuania

The programme and full details of the Groupe Consultatif/Lithuanian Actuarial Society Summer School in Vilnius from 2-6 August 2004 are now available at www.gcactuaries.org/events.html

Groupe Consultatif's 17th Colloquium in Muenchen.

The brochure for this Colloquium, which will be held in Muenchen on September 10th, is available at www.gcactuaries.org/documents/17th_colloquium_brochure.pdf

IAA Guidelines of Actuarial Practice

Consultation on IAA guidance for actuaries relating to the implementation of international accounting standards for insurance liabilities is expected to begin soon. Members should be aware that the IAA adopted Guidelines of Actuarial Practice for Social Security Programs in January 2003. This guidance applies to actuaries carrying out demographic and cost projections for social insurance programmes and can be accessed at: www.actuaries.org

2004 / 2005 Council

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Declan O'Neill
Liam Quigley

Golf

The Matchplay competition commenced in April and is well underway. Further details can be found in the Member's section of the Society's website.

Society's Annual Ball

The Annual Ball took place on Saturday 22nd May 2004 in the Four Seasons Hotel. There will be lots of photographs in the next issue of the Newsletter.

On the Move

⇒ **Fellows** **Suzanne Macaulay** has moved from Prudential International Assurance plc to **Norwich Union International Ltd.**

⇒ **Students** **Niamh Tyrrell** has moved from New Ireland to **HSBC Life (Europe) Ltd.**



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