THE SOCIETY OF ACTUARIES IN IRELAND

Current Topics 2007

Mairead Coleman
Niamh Gaudin
Mary Hall
Donal Keating
Paul Kenny
Maria McLaughlin
Julia Moore
Karl Murray
Patrick Needham
Joanne Roche

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1 Foreword

This paper presents the "hot topics" from each of the four main practice areas of life, investments, pensions and general insurance. The Society of Actuaries in Ireland has produced three such papers in the past, the most recent was presented in 2004.

It is fascinating to compare the 2004 list with the 2007 list. This year's list of hot topics has some common themes with the 2004 paper – mortality projections, the Personal Injuries Assessment Board, changes to professional guidance and the gender directive all appear on both papers. But many on the 2007 list are new – this paper discusses GMXB's and SSIA's, the 2004 paper discussed geared trackers and PRSA's. This paper discusses International Financial Reporting Standards; the last paper discussed Market Consistent Embedded Values. The 2004 paper also discussed the expected impact of the smoking ban (March 2004), the formation of the Financial Regulator (May 2003) and the introduction of penalty points (November 2002). In 2007 we are discussing climate change, the regulation of reinsurance and compliance monitoring in pensions.

As before, the aims of this "hot topic" papers are two-fold:

- To provide a chronicle of the activities affecting actuaries in Ireland in 2007;
- To provide newly qualified actuaries with the opportunity to participate in the Society of Actuaries in Ireland.

The recently qualified actuaries contributing to this year's paper are:

- Maria McLaughlin, Karl Murray (Life)
- Mairead Coleman, Paul Kenny (Investments)
- Donal Keating, Patrick Needham, Joanne Roche (Pensions)
- Niamh Gaudin, Julia Moore (General Insurance including Reinsurance)

The editor and chair for this paper was Mary Hall. Many thanks to all our authors, including Mary Hall for taking on the difficult task of recruiting, organising and consolidating the work of the recently qualified actuaries. We urge you to read this paper and reflect on the wide range of issues facing actuaries. We are at a time of strong growth in our membership numbers and a rapidly changing environment for all professions in Ireland. This paper seeks to record the key issues in 2007 both as an overview for current actuaries and a resource for actuaries of the future seeking to understand our times.

We have drawn material widely for this paper, and have listed the major sources in the Appendix. Any opinions expressed are those of the authors and not necessarily those of the Society of Actuaries in Ireland, the authors' employees or colleagues. We have checked source materials where possible, but any errors remain our own.

Mike Claffey
Chairman, Education Committee of the Society of Actuaries in Ireland
7th December 2007

2 Investment

Pension schemes, insurance companies and investment managers all have assets that must be invested in an appropriate manner, with due regard for relevant legislation and the specific requirements of the investor.

On the liability side, the introduction of accounting based valuations and increasing requirements for disclosure has led to a trend for liabilities to be 'marked to market' i.e. measured with reference to similar assets in which there is a liquid market. Therefore not only are we as a profession interested in assets for the purposes of investing in those assets, but also as indicators for the value of the liabilities we are looking to place a value on.

It is therefore a fact of life that the whims of the investment market are to affect the work we all do. This section looks at a number of recent developments within the investment world, as well as reflecting on returns achieved over the last number of years.

A large part of this section focuses on the investment of pension schemes. However the concept of risk management and the way in which pension funds look at investment can be applied to all types of investment. In particular the selection of investments with reference to liabilities is a theme that is common to all investors.

The following topics are covered in this section:

- Market Update
- Climate Change & Investment Markets
- Trends in Investment
- Legislation

2.1 Market Update

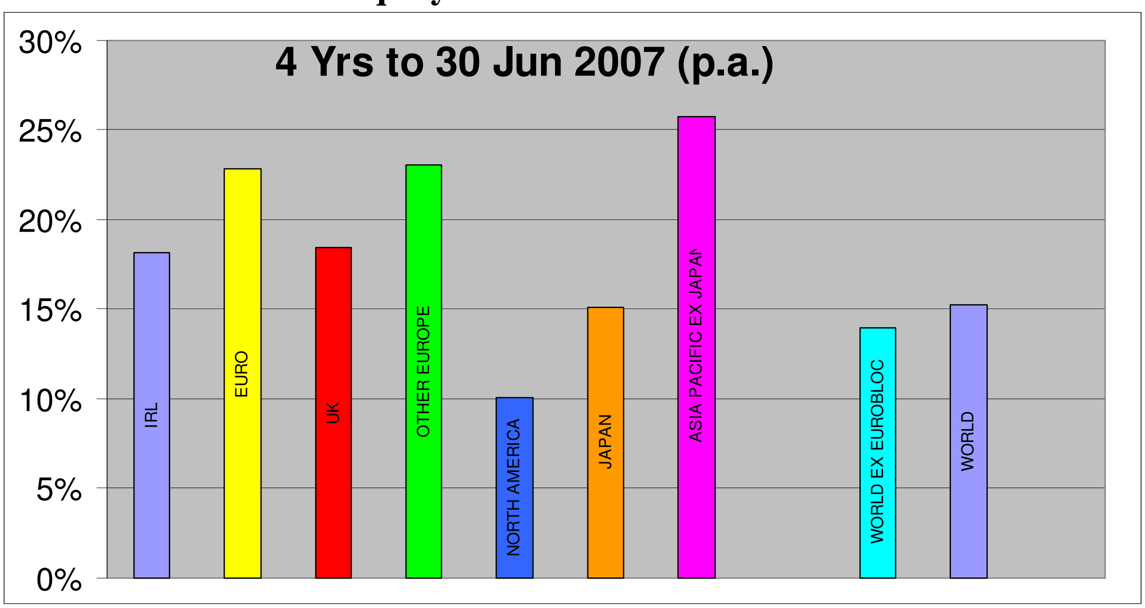
2.1.1 Equity Markets

The market down-turn in 2001 and 2002 was a wake-up call for many investors, who had naively assumed that double-digit equity returns were here for good. With the FTSE World falling nearly 40% over this two year period, it was hard for many investors to maintain confidence in the markets.

Global equity markets have, however, recovered strongly since early 2003. Some markets performed better than others, in particular the Eurozone and Ireland, returning 18% and 23% respectively over the four year period to 30 June 2007. Returns in some overseas countries, most notably the US and Japan, suffered at the hands of a strengthening Euro, but nonetheless generated significant positive returns.

The following chart shows the 4 year returns to 30 June 2007 for the main equity market regions. As can be seen from this chart, all of the major regions are in positive territory over the period:

Equity Market Performance[1]

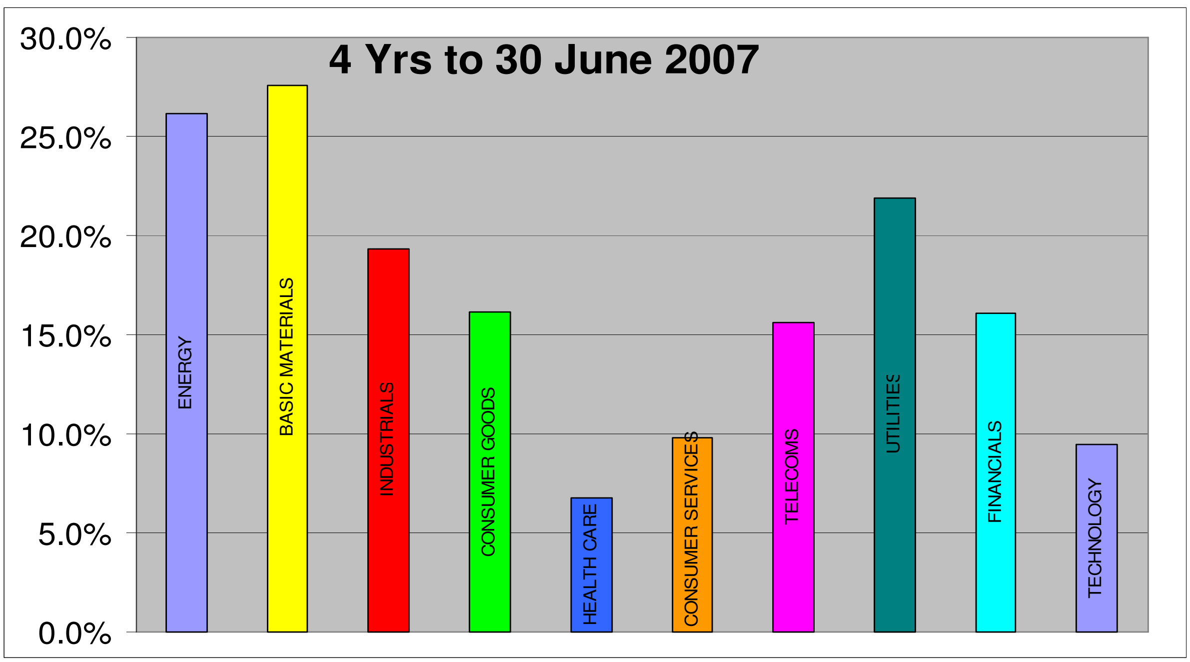


Returns shown are annualized, gross of withholding tax, total returns in Euro on the relevant FTSE indices. Source: Rimes

Irish equities have been the success story for many years, outperforming their overseas counterparts even throughout the 2001/2002 market down-turn. Given the historically high (c. 20%) weighting in Irish pension fund portfolios to Irish equities, this has been of significant benefit to the financial standing of Irish pension plans. Many Irish plans are now disinvesting from their Irish equity holdings in a bid to gain greater diversification across a global range of industries and companies (see Section1.3.2). While the performance of the ISEQ over 2007 YTD has been muted (performance for the first 6 months of 2007 was 0.2%), only time will tell if this has been a wise move.

Value sectors such as Utilities and Basic Materials have been the winners in sector terms in recent times, well outperforming other traditional growth sectors such as Technology and Health Care.

Sector Performance



Returns shown are annualized, gross of withholding tax, total returns in Euro on the relevant FTSE sector indices. Source: Rimes

This is backed up by the figures for the MSCI Growth and Value indices over the four year period at 17% p.a. and 12% p.a. respectively. In line with this, high yield stocks (mostly falling into the value category) have been strong outperformers of late, with some commentators wondering whether a high yield "bubble" has emerged.

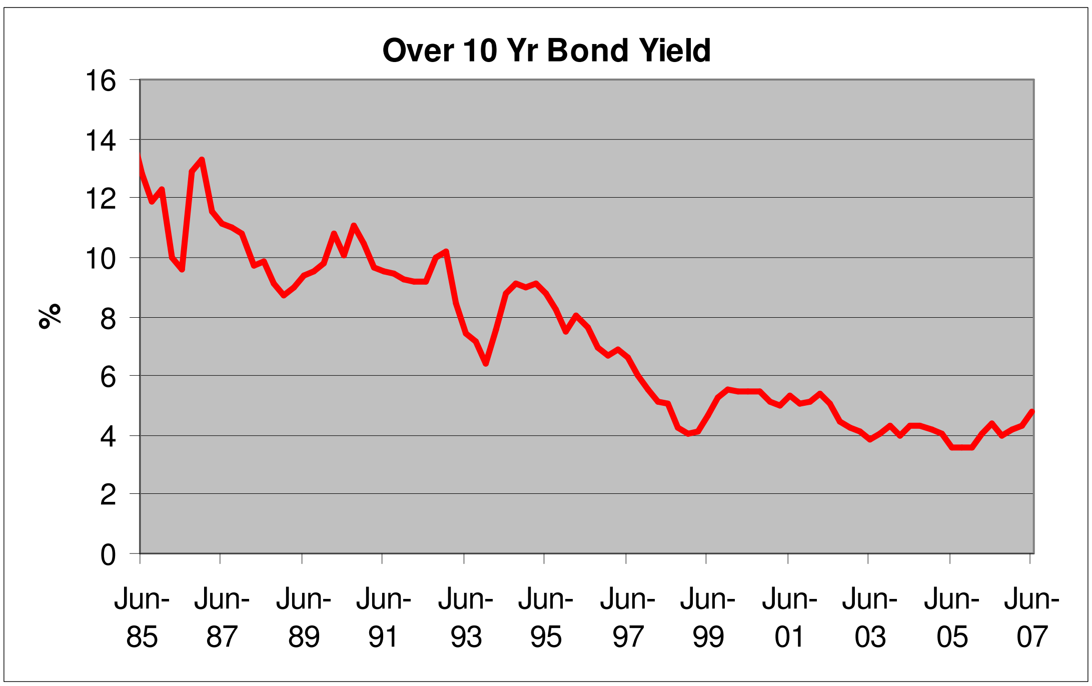
It can also be noted that small cap stocks have significantly outperformed their larger counterparts of late, which has led to many Irish asset managers (who tend to focus on large cap stocks) underperforming the index.

2.1.2 Bond Markets

Bond markets have been the subject of much debate in recent times due to their increasing significance in the valuation of liabilities.

Just when equity markets were falling in 2001/2002, bond markets were moving in the exact opposite direction, generating significantly positive cumulative returns of almost 20% over the two years. This is of course great news for bond investors but not for the value of any liabilities which are linked to bond yields.

Pension schemes in particular felt the impact of falling bond yields, with the resulting increase in the cost of annuities causing or contributing to many pension schemes moving into deficit. The following chart shows the movement of the Over 10 Year bond yield over the last 20 years:



Source: iboxx

It can be noted that yields have increased significantly over 2007, but relative to the overall shift seen over the last 20 years, this is clearly minor. It is generally accepted that low bond yields are here to stay given low inflation.

A key development of late is the flattening of the yield curve, with very little premium for longer dated bonds over more medium term issuances, with some suggesting this is due to the increased demand from pension funds for the long end of the curve.

2.1.3 Property Market

Returns over the last number of years on Irish property have been stellar, with the IPD Ireland Index reporting total returns of 21% p.a. over the three years to 30 June 2007.

Interestingly however, the ISEQ index actually outperformed the property sector over the same period (a return of 25% p.a.), although there is a clear correlation between the fortunes of the construction business and the Irish stock exchange.

Amid rising interest rates and fears of a recession, confidence in the Irish property market has been shaken somewhat over 2007, with reports of falling asking prices and much reduced demand on residential properties. However commercial property seems relatively stable and the much hyped crash is yet to materialise, with the IPD Index reporting an increase of 5.3% over the first half of 2007. Whether we are in for a "soft landing" or a sharp correction remains to be seen.

Many institutional investors are now shifting focus to the European market, in a bid to and diversify overseas. However the prohibitive exit costs (due to stamp duty, which is incurred on entry but effectively levied on exit) involved means that there has not as yet been any meaningful sell down of Irish property by institutional investors.

In summary, returns in equity and property markets have been strong over recent times. The drivers behind these returns have been stronger economic growth, renewed investor confidence and increasing demand for these assets.

SUMMARY

- 2007 was a turbulent year for global equity markets following the strong recovery since the falls in 2001/2002.
- Irish equity markets performed well in recent years though the downturn in 2007 impacted significantly on returns.
- Falling bond yields in recent years have impacted significantly on the value of liabilities linked to bonds (e.g. annuities).
- Significant returns on Irish property in recent years, but expectations of lower returns in future years.

2.2 Climate Change

One aspect which has not as yet been a major influence on investment markets, but which is almost certain to play a big part in future and is very topical at present, is climate change.

"Climate change is the greatest long-term challenge facing the international community. That might seem an extreme statement in a world trying to cope with the pressing challenges of terrorism, famine, war and disease; unfortunately, it's true."
The Rt. Hon. Margaret Beckett, UK Secretary of State for Environment, Food and Rural Affairs

The vast majority of scientists agree with the growing consensus (supported by empirical evidence) that climate change is both happening and is a cause for concern.

As temperatures rise, there will be direct consequences, such as rising sea levels (threatening coastal communities, fisheries and coastal ecosystems) and more extreme weather events, including droughts, floods and storms (threatening widespread impacts). Underlying precipitation (rainfall) patterns are also predicted to change, with agricultural, operational and broader humanitarian implications.

But what impact does this have on the investment world?

Consider the equity market. The price of any individual share represents the market view of that company's prospects, which in turn could be affected by the events described above in any number of ways. Take for example, large companies consuming significant proportions of a country's energy supply. This company is at risk of the energy supply drying up, or the government imposing a penalty on the company for its heavy use of energy. Research undertaken in 2004 by Innovest Strategic Value Advisors on the US electricity sector for example, indicated that, even under a relatively conservative scenario, up to 5.1% of market capitalisation could be at risk from the consequences of climate change and absent risk management action. Under a more high-risk (but still plausible) scenario, their calculations indicate this figure could be over ten times higher.

Clearly property holdings are at risk as a result of climate change, through the physical impacts of climate change e.g. floods, high winds, subsidence. Another less obvious way in which the property market may be affected is through the potential to make properties energy-efficient. Although asset valuations and market pricing has to date been slow to reflect the environmental and running cost benefits of low-energy buildings, the EU Directive on the Energy Performance of Buildings (which came into effect in 2006), will likely change this.

Finally, bond markets could also potentially be affected by changes in public borrowing, driven by climate related events. Although OECD countries should be able to absorb any public costs associated with climate damage relatively easily, there is the potential for developing countries (many of which are low-lying or island nations) to be dramatically impacted.

In summary, investors own a slice of the global economy, relying on continued economic growth to grow their assets. If climate change is posing a threat to growth, it is consistent with prudent investment management to identify, manage and mitigate this risk. Those that successfully do this are sure to benefit at the expense of those that don't.

SUMMARY

- Climate change likely to be a big influence on investment markets in the future.
- Possible impact on bond markets (changing public borrowing requirements), property markets (physical damage) and equity markets.
- Development of alternative assets such as weather derivatives, global warming indices and alternative energy funds.

2.3 Investment Trends

Historically pensions were considered to be a long-term business, and market-related risks of defined benefit plans (in relation to both assets and liabilities) were smoothed in triennial actuarial valuations. In recent years, however, we have seen the evolution from smoothed actuarial valuations to methods of valuing liabilities that are far more market-related.

Within this environment risk management has become the dominant theme for many defined benefit pension schemes in Ireland. The focus of this section is to give an overview of how the various manifestations of risk management have impacted the investment landscape for pension schemes, with a particular emphasis on:

- Liability risk management, which is focused on the use of bonds and swaps to manage the financial risks arising from defined benefit liabilities;
- Equity exposure reduction, which has been evident in the conscious reduction in the average strategic equity allocation over recent years; and
- Risk diversification and the move of pension funds towards non-traditional asset classes in their search for alternative risk exposures to equities.

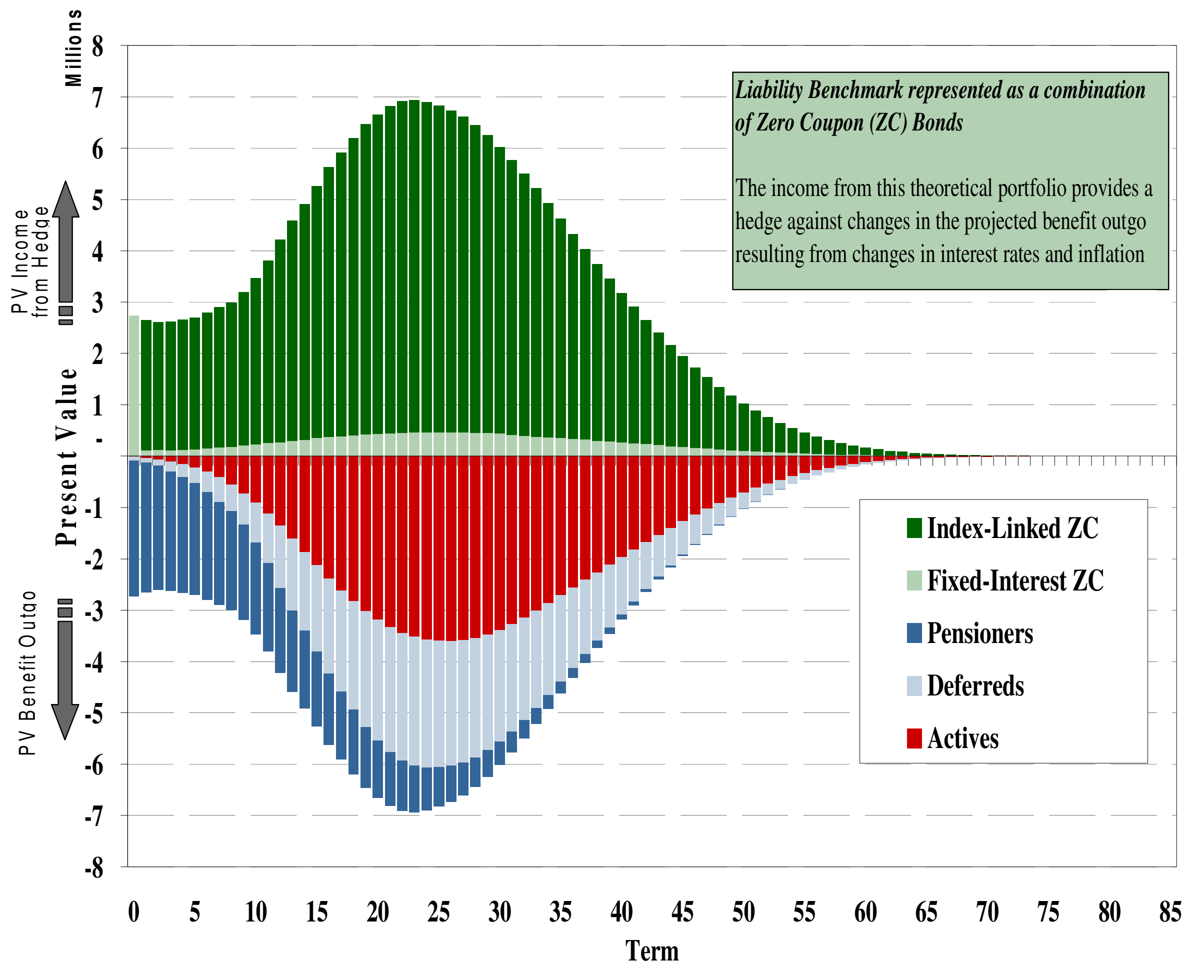
It should be appreciated that this risk management environment is common to all institutional investors and that many of the trends in and influencing factors on investment discussed below would hold regardless of where we are talking about pension scheme investment or not. However, given the high profile nature of pension schemes and the noticeable shift in the investment framework over recent years this section focuses on investment issues for DB plans.

2.3.1 Liability Risk Management

Given the move towards a market related view of defined benefit pensions, the importance of bonds in managing the risk of pension schemes has become increasingly apparent. Now, with the evolution of various forms of 'Liability Driven Investment' (LDI) funds in the marketplace, there are a wide range of building blocks available to assist pension schemes in managing investment risk relative to liabilities.

The graph below illustrates the concept underlying the 'LDI' approach to investment. It shows the pay-off profile from a 'liability benchmark portfolio', which consists of a series of zero coupon index-linked and fixed interest bonds/swaps, versus the present value of the projected pension scheme cashflows.

By carefully constructing the right portfolio of bonds/swaps, a pension scheme can match the projected cashflows of the scheme with a corresponding series of bond/swap redemptions. The value of this portfolio should move in line with the market value of the liabilities of the scheme and should serve to largely remove the interest rate and inflation risk that scheme's face.



In practical terms, it may not be necessary (or possible) to invest in a series of bonds/swaps with redemption dates and amounts to *exactly* mirror the projected cashflows of the scheme. Rather than matching the cashflows in each individual year however, we can arrive at the liability benchmark portfolio by considering the cashflows of the scheme in aggregate (or in buckets of say, 5 years). The scheme can then invest in an appropriate mix of nominal/index-linked bonds with an overall 'duration' (i.e. sensitivity to interest rates) and inflation sensitivity that matches that of the liabilities.

It should be borne in mind, that in pursuing any 'LDI' type approach to investment that there are a number of limitations which need to be borne in mind, including:

- Apart from the 'investment-related' aspects that affect valuations of liabilities, there are also various unknown factors, e.g. mortality, salary increases in excess of price inflation, withdrawals etc, which will affect the future cashflows from the scheme and which cannot be matched in advance through investment policy.
- Irish inflation-linked bonds are in scarce supply. As such, the index-linked bonds which are used to hedge the inflationary element of the liabilities are generally linked to Eurozone price inflation rather than Irish inflation.

Having defined what the liability benchmark portfolio is, the scheme can then choose to take targeted risk relative to this portfolio, with the intention of delivering an excess return. The level of risk that trustees/sponsors are willing to run will be driven by a number of factors, such as surplus, contribution policy, scheme maturity, etc.

Having considered the nature of the liabilities and how to manage risk relative to these liabilities, we will now look at how this increased focus on liability risk management is influencing investment allocations of Irish pension schemes.

2.3.2 Asset Allocation Trends

Investment of Irish pension schemes has changed significantly over the last number of years. Schemes are increasingly adopting Scheme-specific benchmarks as opposed to discretionary balanced mandates, increased diversification has been a theme, and bonds have been receiving much more attention due to their liability-matching characteristics.

The Irish Association of Pension Funds (the IAPF) conducts an annual survey on the investment strategies of Irish pension schemes. The results of the survey for 2006 and for 2003 (by way of comparison) are shown below:

Asset Class	**31/12/2003**	**31/12/2006**
Irish Equity	12.4	11.0
Eurozone (ex Irl) Equity	15.7	17.5
Global ex Eurozone Equity	33.1	34.9
Total Equity	61.0	63.4
Bonds	24.4	19.7
Property	9.1	9.0
Cash	4.2	5.5
Alternatives	1.2	2.4
Total	**100.0**	**100.0**

The table highlights several key developments over the last number of years.

Irish Equity

The survey reveals a slight decrease in the proportion of Irish equity in Irish pension schemes. However, given that the return on the ISEQ over the period was 27.1% p.a., these numbers slightly underestimate the total sell off that occurred. Many pension schemes are reducing their allocation to Irish equities (and in many cases eliminating the specific Irish allocation entirely) in a bid to achieve greater diversification across the global equity market, with a bias to the Eurozone to retain the currency link.

The average allocation of 11.0% masks the fact that those plans that have adopted a Scheme-specific benchmark have typically eliminated their Irish equity weighting, whereas those still invested in discretionary balanced funds have allocations of up to 20%.

Total Equity
Total equity allocation has increased slightly from 61% to 63.4%. This increase is largely due to the strong returns generated by the equity markets over the period, and masks the emerging trend seen in recent times whereby Plans are *reducing* their equity exposure, in a bid to reduce the reliance on the equity market risk premium while still retaining the potential for high expected return.

Again the average here incorporates a significantly higher allocation to equities on the part of discretionary managed funds (an average of 75%+) and a commensurately lower allocation in Scheme-specific benchmarks.

Bonds
The average allocation to bonds decreased over the period, largely due to the outperformance of equities over bonds during the three-years. This masks the slowly growing trend for Plans to invest with reference to their liabilities, leading to increased focus on the bond markets.

The types of bonds invested in are also changing. Where previously schemes may have invested in a generic bond fund offered by their investment manager, schemes are now increasingly recognising that they can better match their liabilities by investing in longer dated bonds, and in some cases, inflation-linked bonds.

Alternative Assets
The allocation to alternative assets doubled since 2003. This reflects the diversification theme, with Plans looking to diversify away from the equity market risk premium and into other, lowly correlated, assets. Examples of such assets include hedge funds, private equity, commodities and Global Tactical Asset Allocation (GTAA). Further details of these assets can be found in section 4.3.

Again the numbers here mask the fact that discretionary balanced funds do not typically allocate to these asset classes, which means that Plans with specific benchmarks will have a higher allocation overall. However allocations to these assets does tend to be quite small (5%-10%), with many Plans taking a toe in the water approach by investing in one alternative for now, with a view to considering other assets in years to come. Therefore the percentage of total assets allocated to alternative assets can be expected to increase over time, but is unlikely to form a major part of a pension Plan's portfolio for the foreseeable future.

2.3.3 Risk Diversification

Pension schemes, and indeed all investors, should always look to make the best use of any investment risks they are running. This involves either maximising return (for a given level of risk) or minimising risk (for a given expected return).

Investing in the *right types* of equities and bonds (e.g. liability matching bonds), is the first step in optimising the risk/return trade off. However, diversifying the investment risks away from equities by investing in alternative asset classes can also play a key role in optimising this risk/return trade off.

Alternative assets range from commodities, private equity, credit and property to 'alternative alternatives' such as infrastructure, international property, timber and renewable energy. 'Alpha alternatives' are an interesting sub-set of alternative assets which have a stronger active management character and may provide a good degree of diversification for schemes. These are potentially the least familiar of the long list of alternative assets available and accordingly we have set out below a summary of the key characteristics of these emerging assets.

2.3.3.1 Global Tactical Asset Allocation

Global Tactical Asset Allocation (GTAA) is an investment strategy under which positions are taken in various markets with a view to profiting from movements, either up or down, in those markets. The focus is on general movements in the markets rather than on performance of individual securities within them. Positions are generally taken with a relatively short term time horizon (say, 3 – 6 months) – hence the term Tactical Asset Allocation – and in markets across the globe – hence the term Global.

Positions are invariably implemented via derivatives e.g. selling futures on markets expected to underperform, buying futures on markets expected to outperform.

Positions taken by GTAA managers not only include major world equity and bond markets and currencies, but also emerging market equities, debt and currencies, commodities, industries/sectors of equities markets, large vs. small equities, credit spreads and yield curves.

The reasons why GTAA can be considered an attractive alpha source include:

- The performance differentials between asset classes are frequently substantial.
- The derivative instruments used in GTAA are mostly highly liquid and transaction costs are low.
- The volume of assets managed with a focus on relative performance of asset classes is low compared to that focused on finding opportunities within asset classes.
- The analysis and decision-making involved in GTAA is focused on cross-market comparisons. This is very different to the focus of active management within

traditional asset classes and of many hedge fund strategies and accordingly, GTAA should be a good diversifier within an alpha portfolio.

2.3.3.2 Hedge Funds

Hedge funds are products that are not easy to define concisely. The term hedge fund is applied to a large universe of heterogeneous investment strategies often delivered in the form of funds, some of which are by no means "hedged".

It is best to define hedge funds by some key characteristics that most hedge funds share:

- Heavily skill-based i.e. more reliant on investment manager skill rather than the performance of markets in general;
- Investment flexibility i.e. little or no restrictions on asset classes and investment techniques;
- Most employ short positions as well as long, and use leverage;
- A focus on preserving and growing capital rather than comparing performance relative to a market index.

Hedge funds tend to have an 'absolute return' target (e.g. 10% p.a.) or define a target relative to cash, especially "market neutral" funds.

Hedge funds are highly actively managed investment vehicles. The attraction of hedge funds for investors is the degree of exposure provided to active management, which may be difficult to access in 'more traditional' strategies. Those that invest in hedge funds must also accept the risk that hedge funds fail to produce the expected level of active returns, as well as some of the negative aspects of hedge investing (notably the lower levels of transparency, liquidity and investor protection, and higher fees).

The attraction of hedge funds is supported by the anecdotal evidence of the flow of investment skill from traditional fund management to hedge funds, as well as the ability to access specialist investment strategies not utilised in traditional fund management.

2.3.3.3 Active Currency Management

Active currency management is taking a view on whether exchange rates are likely to rise or fall. Currency managers mainly implement their views via three month currency forwards but may also use the spot market, options or futures.

What makes active currency management attractive?

- The large volumes traded.
- The very low dealing costs – round trip dealing costs are well under 0.1%.
- The high percentage of market activity that has different objectives and can provide opportunities for active managers. The other players include central banks (for macroeconomic policy management), corporate treasurers (for hedging or transactional purposes), tourists and institutional investors.

The number of active currency managers has increased dramatically but the proportion of currency managed actively is still small in relation to the size of the market. The same cannot be said for equities and bonds. The case for active currency management lies in the competitive risk adjusted returns that can be achieved together with the low correlation of active currency returns with other strategies.

2.3.3.4 Unconstrained Equity Investment

Unconstrained equity investing refers to mandates where the investment manager is expected to construct and manage their portfolio of stocks in a way that reflects their judgment, without being hindered or influenced by the composition of a benchmark index. The manager may also be free to invest a high proportion in cash if they have a negative view on equity markets. Generally, there would be few investment restrictions, although a mandate would rarely be totally unconstrained.

Unconstrained equity portfolios may be volatile, in particular if they are concentrated around a relatively low number of stocks. They will display very high volatility relative to traditional equity benchmarks ("tracking error"), but of course this is to be expected, since the portfolio is not being managed with reference to the benchmark. However, absolute volatility could be lower than the benchmark if, for example, the manager's best ideas are particularly good at protecting capital in a falling market.

Unconstrained mandates merit consideration in part due to misgivings about conventionally managed equity portfolios, in particular, concerns about 'benchmark hugging'. The consequence of benchmark hugging is that even when an active manager makes a good investment decision, the amount of out-performance may be quite small relative to the market return. Essentially, clients receive limited value for the active fees that they are paying.

Unconstrained mandates should be a better way of accessing manager skill and receiving a higher level of manager 'alpha' and hence better value for the active management fees.

The potential for higher alpha may also improve portfolio diversification, since manager alpha is not correlated to asset class movements.

However, as with traditional mandates, ultimate success is still dependent upon identifying manager skill. Removing/reducing constraints provides more scope to outperform, but the manager must have the investment skill in the first place. Hence 'manager selection' is an even more crucial exercise when unconstrained mandates are being considered.

SUMMARY

- ❖ Move to market related valuation of liabilities resulting in investment strategies focussed on risk management.
- ❖ Liability risk management – portfolio of bonds/swaps which allows a pension scheme to match the projected cashflows of a scheme.
- ❖ Diversification of investments away from equities to alternative assets such as Global Tactical Asset Allocation (GTAA), Hedge Funds, Active Currency Management and Unconstrained Equity Investment.
- ❖ Changes in asset allocation of Irish pension schemes in recent years with alternative assets increasing in popularity.

2.4 Impact of legislation on pensions scheme investments

The current regulations governing investment for Irish pension schemes stem from the implementation of the EU Institutions for Occupational Retirement Provision ("IORPs") Directive in 2005. The key requirements that resulted from this directive were that pension schemes must adopt a Statement of Investment Policy Principles ('SIPP') and must adhere to a set of investment rules when making investment decisions

2.4.1 Statement of Investment Policy Principles

A SIPP sets down in writing the Trustees' investment policy. The new regulations require that all pension schemes with more than 100 members (combined active and deferred member numbers) put in place a SIPP.

The SIPP needs to include the following details:

- The investment objectives of the trustees;
- The investment risk measurement methods;
- The risk management processes;
- The strategic asset allocation implemented with respect to the nature and duration of pension liabilities.

The SIPP must be reviewed at least every 3 years, and must be revised in any event following a change in investment policy which is inconsistent with the statement.

2.4.2 Investment Rules

The regulations set out specific rules that must be applied to pension fund investment. These rules state that assets of the scheme must:

- Be invested in a manner designed to ensure the security, quality, liquidity and profitability of the portfolio as a whole;
- Have regard to the nature and duration of the expected liabilities of the scheme in so far as is appropriate;
- Be predominantly invested on regulated markets (in this case "predominantly" means at least 50% of the assets);
- Have any investments which are not on regulated markets kept to a prudent level;
- Be properly diversified so as to avoid excessive reliance on any particular asset, issuer or group of undertakings;
- Avoid excessive accumulations of risk in the portfolio as a whole, and investments issued by the same issuer or group of issuers must not expose the scheme to excessive risk concentration;

- Not include an borrowing, except for liquidity purposes and only on a temporary basis;
- Only be invested in derivative instruments in so far as they contribute to risk reduction or facilitate efficient portfolio management.

Trustees must employ an investment manager to invest the scheme's assets or otherwise satisfy the Pensions Board that at least one of the trustees is suitably qualified to invest the scheme's assets.

SUMMARY

- ❖ Trustees of a pension scheme now required to produce a Statement of Investment Principles (SIPP) outlining the schemes investment strategy.
- ❖ The 2005 EU directive IROPS (Institutions for Occupational Retirement Provision) sets out rules that the investments of a pension scheme must comply with.
- ❖ Trustees must either employ an investment manager to invest the schemes assets or satisfy the Pensions Board that at least one of the Trustees is suitably qualified to invest the schemes assets.

3 Common Issues in Life and General Insurance

The insurance sector has seen significant regulatory changes in recent years. As the European parliament seeks to establish a more open European insurance market several directives have been passed which aim to achieve greater consistency in the standards of reserving and reporting amongst European insurers operating in different countries.

Irish insurers are currently preparing for the imminent implementation of Solvency II and IFRS phase 4. Also reinsurers are now authorised and regulated in Ireland bringing more requirements and demands for actuaries.

Other European directives impacted indirectly on the insurance sector with the Gender Directive in December 2004 potentially forbidding distinguishing between males and females in the pricing of insurance products.

As these topics are common to both Life and General Insurers this section will give an overview of these common topics and where appropriate more specific information is given in the Life and General Insurance sections.

The topics covered in this section are as follows:

- Solvency (Solvency II)
- Financial Reporting (IFRS)
- Regulation (Gender Directive & Consumer Protection Code)
- Reinsurance

3.1 Solvency

In the EU Insurance companies are required to demonstrate to the regulatory authorities that they hold sufficient capital in order to meet their liabilities i.e. that they are solvent. Insurance companies currently report their solvency position under the EU directive known as Solvency I which has been effectively in force since the mid 1980's. Solvency I is due to be replaced by Solvency II by 2012.

3.1.1 Solvency II

Solvency II is an EU project which aims to develop a new solvency system to be applied to life assurance, non-life insurance and reinsurance undertakings, which Member States and supervised institutions are able to apply in a robust, consistent and harmonised way.

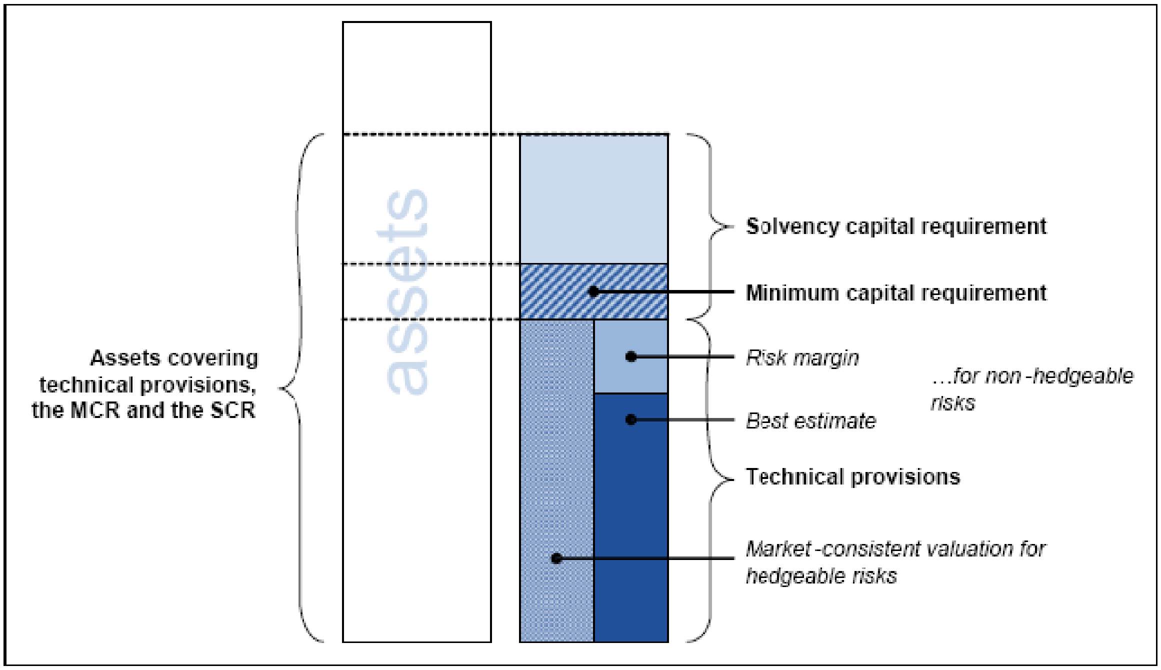
Solvency II is set to mark a move away from the simplistic regulatory capital requirements currently in force across most of Europe. In their place will come a more qualitative and quantitative approach, in which capital levels are geared to the risks being run within each business and the effectiveness of the measurement, monitoring and control functions in operation to manage them.

A three pillar system is envisaged encompassing:

- Pillar 1 – Quantitative requirements
- Pillar 2 – Supervisor review
- Pillar 3 – Disclosure requirements

It is envisaged that Pillar 1 encompasses two capital requirements - Minimum Capital Requirement (MCR) and Solvency Capital Requirement (SCR), sitting on top of technical provisions made up of the best estimate of the liability plus a risk margin to reflect any uncertainty in the future cash flows, as shown in the diagram below taken from CEIOPS Consultation Paper 20.

The proposed SCR would be based on a 99.5% confidence level of remaining solvent over a one year time period. Breaching it will lead to regulatory intervention of some sort. A ladder of intervention is envisaged depending on how far below the SCR the firm falls – ranging from a plan to restore capital to SCR level as soon as possible down to forced closure on breaching the MCR (and failing to produce a credible recovery plan).
A "standard approach" to SCR calculation is being developed to include an evaluation of operational risk along with insurance, investment and other financial risks. There will also be the option for firms to use their own "Internal Model", subject to supervisor approval.



Pillar 2 is likely to include additional capital evaluation based on internal assessment of risks and controls, subject to supervisory review.

Pillar 3 will comprise requirements to disclose information relating to risk and capital levels to potential and actual policyholders, thus designed to help exert a discipline of transparency in the market.

The Solvency II Directive will follow the new EU Lamfalussy approach – i.e. Directive will be reasonably high-level and concentrate on the key principles and structure of the framework (referred to as a "Level 1" or "Framework" directive). "Level 2" or "Implementing" measures will be developed (mainly by European Commission and the Member States) which will put detail on the bones of the directive. "Level 3 guidance" will also be developed by CEIOPS (Committee of European Insurance and Occupational Pensions Supervisors) in order to support harmonised and consistent implementation.

3.1.2 Project Timetable

After several years of consultation, the draft Directive was presented to the European Parliament in July 2007, with implementation of the framework potentially to be in place by no later than 2012 according to the Financial Regulator.

The 4th in a series of EU-wide pilot calculations inviting insurance companies to produce sample numbers and to make comments, Quantitative Impact Study (QIS) 4, will run in the first half of 2008. The scope of QIS4 is not confirmed, but it is expected to include some additional refinements on QIS3, including the production of MCR and SCR capital figures under a range of potential bases.

3.1.3 Aims of Solvency II

While achieving consensus across EU Member States is not easy, most in the industry would share Paul Sharma's, head of the CEIOPS[1] Pillar I expert group, desire (quoting from a speech last October) for:

- a regulatory environment which incentivises and rewards insurance firms to use modern risk management practices that are appropriate to the size and nature of their business; and also
- A more risk-sensitive and risk-responsive capital requirement that not only takes account of the risks on the liability side, but also on the asset side, and gives due credit to the use of risk mitigation techniques.

SUMMARY
❖ Under Solvency II the capital of a business should reflect the risks inherent in running the business.
❖ Capital = Solvency Capital Requirement (SCR) + Minimum Capital Requirement (MCR) + Technical Provisions.
❖ The SCR can be calculated using the standard approach or using company specific "internal models".
❖ Approach aims to reward companies which implement good risk management practices by allowing them to hold less capital than companies with less well developed risk management strategies.
❖ Implementation planned for 2012.

[1] CEIOPS = Committee of European Insurance and Occupational Pension Supervisors established by the European Commission in November 2003.

3.2 Financial Reporting

3.2.1 International Financial Reporting Standards (IFRS)

3.2.1.1 Introduction to IFRS

Since 2005 all listed companies in the EU are required to prepare their consolidated financial statements in accordance with accounting standards set down by the International Accounting Standards Board (the "IASB"). This numbers around 7,000 companies. To date a number of such standards have been published by the IASB which impact on insurance business from an actuarial point of view. These include IFRS4, IAS32, and IAS39.

Many of the standards forming part of IFRS are known by the older name of International Accounting Standards (IAS). IAS were issued between 1973 and 2001 by the Board of the International Accounting Standards Committee (IASC). In April 2001 the IASB adopted all IAS and continued their development, calling the new standards IFRS.

In 2005 IFRS 4 was adopted. However, this was only Phase I of the implementation for insurance contracts.

3.2.1.2 IFRS 4 Phase I

The first phase was to define what was meant by an insurance contract. Under IFRS 4 contracts are classified as either "investment" or "insurance". Investment contracts are accounted for according to the principles laid down in IAS 32 and 39. The treatment of investment contracts is quite different to Irish GAAP accounting or Embedded Value methodologies.

The definition of an insurance contract principally involves the insurer being exposed to risk of loss from events including:

- Death
- Survival
- Sickness
- Disability
- Property damage
- Injury to others
- Business interruption

Currently IFRS 4 envisages that insurance contracts be accounted for on a local GAAP basis. A new methodology is the subject of the second phase of IFRS 4.

3.2.1.3 IFRS 4 Phase II

On 3 May 2007, the IASB released a Discussion Paper on accounting for insurance and reinsurance contracts entitled 'Preliminary Views on Insurance Contracts' ("the DP"). This is the second phase of the insurance contracts project which in 2005 introduced IFRS 4 – the International Financial Reporting Standard for Insurance Contracts.

The proposals set out in the DP would introduce fundamental changes to insurance accounting and focus on market consistent measurement of insurance liabilities, so-called "Fair Value". This will impact the way investors, regulators and other stakeholders assess the insurance industry. Phase II covers all insurance contracts, including life, non-life, direct insurance and reinsurance.

The DP brings in the concept of Current Exit Value ("CEV") which is essentially the same as the more commonly used phrase Fair Value. The CEV is defined as the amount an insurer would expect to pay at the reporting date to transfer its remaining contractual rights and obligations immediately to another entity. The main proposal in the DP is that all insurance liabilities should be measured at CEV using the following three building blocks:

- Best estimate liability
- Time value of money – the DP envisages that cashflows will be discounted. This is normal practice for life insurers but non-life insurers do not generally discount.
- Margins – this measures the risk margin that a third-party would require to bear the risk themselves.

The proposals would mean a significant change to the way insurance liabilities are valued. The aim is to bring about increased transparency in companies' financial results and greater comparability between companies. On the other hand it is likely that more subjectivity and volatility will be introduced. For example, a lot of the risk margins for insurance contracts cannot be observed in the market so will have to be estimated.

There is a 6-month consultation period following which the IASB will publish an exposure draft expected to be in late 2008. The final standard is currently expected to be published in 2010.

3.2.2 IFRS 7

IFRS 7 ("Financial Instruments: Disclosures") applies for financial years ending in 2007 onwards. It introduces a substantial amount of new disclosure requirements for financial instruments. Some of the disclosures are not new due to the fact that IFRS 7 is partially a replacement of IAS 32. However, the requirements to provide quantitative and qualitative market risk disclosures are new.

The requirements of IFRS 7 also include:

- Disclosure of the sensitivity of results to movements in market prices as a consequence of holding financial instruments.
- Qualitative disclosures about risks faced and the strategies used to manage them.
- Disclosure of the measurement basis and the criteria used to determine the classification of different types of instruments.

3.2.3 Convergence with US GAAP

The United States Securities and Exchange Commission currently requires all overseas companies listed in the US to prepare their results either under US GAAP or according to their local requirements with a footnote reconciling their local GAAP to US GAAP. This imposes expense on companies which are listed on exchanges both in the US and another country. The SEC has proposed a change to its rules to remove the reconciliation requirement for foreign issuers which prepare accounts under IFRS, indicatively from 2009. US registered companies will still be required to use US GAAP.

Separately, in 2002 at a meeting at Norwalk, Connecticut, the IASB and the US Financial Accounting Standards Board agreed to harmonise their agenda and work towards reducing differences between the two sets of standards (the Norwalk Agreement). In February 2006 FASB and IASB issued a Memorandum of Understanding including a program of topics on which the two bodies will seek to achieve convergence by 2008.

3.2.4 FRS26

FRS26 is an accounting standard issued by the Accounting Standards Board (ASB) in the UK. It sets out standards in connection with the measurement of financial instruments and it applies to UK and Irish companies (listed and unlisted) that meet specified criteria set out in the standard.

In essence, a company falls within the scope of FRS26 if it applies current (fair) value accounting where this is not explicitly permitted by historical accounting rules. A key trigger (as highlighted in FRS26) is where a company holds derivatives, either on behalf of policyholders or shareholders, and these are valued at current or fair value. Companies that hold derivatives are likely to value them at current value and so, in practical terms, this test probably boils down to whether or not a company holds derivatives. Many companies are likely to be in scope on this account.

The thrust of FRS26 is that life assurance companies that fall within its scope are required to prepare their financial statements (Companies' Acts accounts) on a similar basis to IFRS. In other words, companies need to classify business as either "insurance" (in accordance with the definition set out in IFRS4) or "investment" and apply the relevant accounting standards.

Existing Irish GAAP will continue to apply for insurance business (until IFRS 4 Phase II introduces a new methodology for insurance business – see above). For Investment business, deposit accounting principles will apply and revenue must be recognised in line with the provision of services. For companies that are in scope, implementation of FRS26 involves significant changes to accounting systems and processes.

In terms of financial impact, FRS26 means that margins generated upfront on investment contracts may need to be deferred over the life of the contract through the establishment of a Deferred Income Reserve (DIR). Correspondingly, companies should be able to establish a Deferred Acquisition Cost (DAC) asset which will help to offset the impact of the DIR. Nevertheless, this deferral can result in a downwards restatement of shareholders' funds.

As an aside – the Financial Regulator in Ireland has confirmed it does not anticipate FRS26 impacting directly on the measurement of solvency – this will remain on the basis used in previous years. They achieved this by using "prudential filters" to remove the DIR adjustments from the Irish Financial Statements to end up with a prior year comparable and a "tangible" (i.e. cash and liquid assets) balance sheet.

SUMMARY

- IFRS – EU accounting standards post April 2001.
- IAS – EU accounting standards pre April 2001.
- IFRS4 was adopted in 2005 and deals with accounting for insurance contracts including life, non-life, direct insurance and reinsurance.
- IFRS4 focuses on market consistent measurement of insurance liabilities.
- Should result in greater transparency of companies financial results but also greater subjectivity and volatility.
- IFRS7 which refers to disclosures for Financial Instruments requires a quantitative and qualitative assessment of market risk.

3.3 Regulation

3.3.1 Gender Directive

In December 2004 the European Union adopted Council Directive 2004/113/EC (the Gender Non-Employment Directive). This Directive prohibits discrimination on the basis of gender in the provision of goods and services, including the provision of insurance and related financial services. Member States must comply with the Directive by 31 December 2007.

Article 5.1 prohibits the use of gender as a factor in the calculation of insurance premiums and benefits. However, Article 5.2 enables Member States to permit differences in premiums and benefits on the basis of gender where justified by "relevant and accurate actuarial and statistical data". In addition, Member States must "ensure that accurate data relevant to the use of sex as a determining actuarial factor are compiled, published and regularly updated". If a Member State wants to allow such differentiation between males and females it must notify the European Commission before 21 December 2007 and review the decision after five years.

Notwithstanding Article 5.2, Article 5.3 forbids different premiums and benefits being offered on the basis of pregnancy and maternity-related costs. However, adoption of this Article may be postponed until 21 December 2009 as long as the Member State informs the European Commission that it is doing so.

The Department of Justice, Equality and Law Reform set up a Working Group in 2006 to look at the implications of implementing the Directive in Ireland. The Working Group considered the product areas of life assurance, critical illness cover, income protection, annuities, pensions and motor insurance. It examined data relating to mortality, morbidity and frequency and severity of road traffic accidents to determine its recommendations. It also reviewed this data in light of the need for data to be published and regularly updated and found that the data currently available would not satisfy the requirements of the Directive.

3.3.1.1 Recommendations of Working Group

In December 2006 the Working Group submitted its report to the Minister. The key recommendations were that:

- Ireland should avail of the exemption under Article 5.2 of the Directive and continue to allow differentiation of insurance premiums and benefits between males and females for products based on mortality risk, morbidity risk and the risk of road traffic accidents;
- subject to legal advice, the implementation of Article 5.3 relating to pregnancy and maternity should be deferred until 2009 to permit further study and analysis, particularly as regards critical illness cover and travel insurance;

- the Financial Regulator should be responsible for compiling statistical and actuarial data on mortality, life expectancy, morbidity and road traffic accidents, publishing this data by December 2007 and updating the data in the future to reflect changes in risk over time;
- The Department of Justice, Equality and Law Reform should carry out a review of the decision to permit differences on the basis of gender after five years.

In April 2007, in conjunction with the publication of the report, it was announced that the government has accepted the recommendations of the Working Group and that legislation will be drafted to give effect to these. The news has been welcomed by the insurance industry which had previously warned of the possibility of premium increases across the board if the derogation had not been availed of.

One final point – the issue of scope has been confirmed for cross-border insurers. The rules of the country of sales (so called Host country) will apply. There is the potential for different European countries to enact slightly different rules on the gender directive; therefore Irish based companies selling across Europe will have to monitor the enactment of the directive in their sales countries, not here in Ireland .

3.3.2 Consumer Protection Code

The Consumer Protection Code (CPC) was published by the Financial Regulator (FR) in July 2006 and came into effect on 1 August 2006. The CPC applies to credit institutions, insurance undertakings, investment business firms, insurance intermediaries, mortgage intermediaries and credit unions. However, it does not apply to regulated entities when transacting reinsurance business or providing MiFID[2] services, amongst others.

As the name suggests the primary purpose of the Code is to protect consumers of financial products and services. It requires a regulated entity to "act honestly, fairly and professionally in the best interest of its customers" and not to "recklessly, negligently or deliberately mislead a customer as to the real or perceived advantages or disadvantages of any product or service". The CPC introduces consistency and a level playing field across the different sectors of the financial services industry by specifying common rules which apply to all regulated entities under the following headings:

- General - product description, prompt and accurate processing of instructions, maintenance of proper records, fees for optional extras;
- Access - complying with money laundering regulation whilst not denying access to financial services;
- Terms of business - must be provided when a service is first provided to a consumer;

[2] MiFID refers to services or activities set out in Annex I of the Markets in Financial Instruments Directive 2004/39/EC.

- Provision of information to the consumer - clear and timely information, advance notice of amendments to services, receipts for payments received, secure transmission of information;
- Preservation of a consumer's rights - exclusion or restriction of any legal liability or duty of care to a consumer is prohibited;
- Knowing the consumer - gather and record sufficient information from the consumer in order to recommend a suitable product or service;
- Suitability - prepare a written statement setting out why a recommended product or service is suitable for the consumer (except in particular circumstances);
- Unsolicited contact - rules setting out circumstances in which cold calling is permitted;
- Disclosure requirements - regulatory disclosure statement to be included on stationery, advertisements and electronic communications;
- Charges - details of all charges and advance notice of increases in charges or introduction of new charges;
- Errors - prompt correction of errors in charges levied or quoted, FR and all affected consumers to be informed of material errors;
- Handling complaints - written procedure in place, up-to-date record of all complaints kept;
- Consumer records - up-to-date consumer records to be complete, easily accessible and retained for 6 years;
- Fees, commissions and other rewards - rules covering to whom remuneration can be paid;
- Conflicts of interest - consumers to be made aware of any conflicts of interest;
- Chinese walls - effective Chinese walls to be in place between different areas of a regulated entity regarding information that could give rise to a conflict of interest or be open to abuse;
- Compliance with this Code - ensure adequate systems and controls in place, information provided to the FR on request.

The CPC goes on to set out more specific rules relating to the provision of banking products and services, loans, insurance products and services, and investment products. Finally, it details rules regarding the advertisement of financial products and services.

The regulations governing insurance products and services relate to quotations, proposals and policy documentation, disclosure, claims processing, premium handling and premium rebates. The regulations governing investment products relate to the provision of statements of transactions and pre-sale product information, the maintenance of transaction records and advice in relation to transactions. In addition, specific rules in relation to the sale of tracker bonds are specified.

It is mandatory for regulated entities to comply with the CPC. Non-compliance may result in fines of up to €5m for companies or personal fines of up to €500k. The CPC over-rides any voluntary codes that may exist, such as the codes of conduct of the Irish Insurance Federation and the Irish Banking Federation. Although the Code came into force on 1 August 2006, there was a phased implementation as the FR acknowledged that it would take time for some of the changes to be implemented. The CPC came into full effect on 1 July 2007 and the FR published an information paper at that time clarifying some of the Code's requirements. In addition, the FR has said that, when monitoring compliance with the Code, it will allow for issues such as systems development and staff training during the initial six month period following full implementation. It has also stated its intention to review the Code after two years.

The introduction of the Code has had implications for regulated entities in terms of reviewing and improving product documentation, reviewing sales processes and implementing new procedures where necessary, training of staff and systems development.

SUMMARY

- Gender Directive prohibits discrimination on the basis of gender in the provision of goods and services.
- Exemption to the directive may be obtained if there is sufficient actuarial and statistical data to justify the differences.
- Data on which any exemptions based should be reviewed every 5 years.

- Consumer Protection Code (CPC) aims to protect customers of financial products and services.
- Common rules apply to all regulated entities.
- Compliance with CPC mandatory for regulated entities by 1 July 2007.

3.4 Reinsurance

2007 has been a year of much change in the reinsurance sector, mainly driven by the transposition of the European Reinsurance Directive into Irish law. In July 2007, the Financial Regulator released a final and revised version of the requirements for Non Life, Life and Composite Reinsurance Undertakings, whilst also extending the date for the receipt of the regulatory returns for 2006 to 28th of September 2007. In addition to this, the consultation papers on Finite & Financial reinsurance were finalised in September 2007, with the first submission due on 28th September 2007. In future years, all annual returns will be required to be submitted within four months of the financial year end.

3.4.1 Non-Life Reinsurance

One of the new requirements is that non-life reinsurance companies submit an annual Statement of Actuarial Opinion ("SAO") to the Financial Regulator. In the case of captive reinsurance companies or companies in run-off the requirement will apply from 31st December 2007. The actuarial opinion covers the gross and net reserves of the company and states that the reserves are greater than the sum of the expected future liabilities plus the expected profit margin in the Company's unearned premium reserves. In addition, and unlike the SAO for non life direct writers, the SAO also requires that the actuary opine that the Statutory Minimum Solvency Margin has been calculated based on applicable data and in line with the relevant Irish legislation. The required solvency margin for non life business is as per Solvency I. However, where the company writes finite or financial business, the rules are different and are explained elsewhere in this paper. The actuary must also state that he/she has reviewed the retrocession programme of the reinsurer. The SAO does not extend to cover the inter-relationship between assets and liabilities, and does not represent an opinion on the overall solvency of the company. It does not consider bad debt reserves or the effectiveness of the overall retrocession programme. The Society has produced guidance on the production of SAOs for Non Life Reinsurance (ASP GI:3). The report supplementing the SAO qualifies as a formal report for the purposes of ASP GI:1. These guidance notes are discussed elsewhere in this paper.

In addition to the SAO, non-life reinsurance companies have an ongoing requirement to produce

- A copy of the retrocession strategy of the undertaking;
- The most recently audited financial statements;
- The form entitled "Annual Return for Non Life Reinsurance Undertakings" for the each accounting period;
- A written statement of compliance with the relevant regulations;
- An authorisation application;
- A detailed actuarial report;

- A supplementary return on any finite or financial business, where relevant.

Discounting is not permitted without permission from the Financial Regulator. Usual discounting requirements for non-life direct business apply. Discounting is not allowable in the final available solvency margin, except in the case of finite/financial reinsurance, as discussed below.

3.4.2 Life Reinsurance

In addition to the actual return and audited financial statements, the life regulations require a copy of the company's retrocession strategy, a statement of compliance and a report on the life reinsurance business, if material. The report must be approved by the Board of Directors and include:

- The methodology and processes used in calculating technical provisions and the required solvency margin on the life reinsurance business
- A breakdown of the assets covering technical provisions by asset class
- A quantitative impact assessment of the retrocession programme on the technical provisions and solvency margin
- The results of any stress test carried out on the business of the reinsurance undertaking
- A copy of the actuarial and/or other relevant professional advice taken in the course of preparing the submission

Technical provisions are required to be determined in accordance with the Insurance Accounts Directive, "on the basis of recognised actuarial methods annually by a Fellow Member of the Society of Actuaries in Ireland, with due regard to the actuarial principles laid down in Council Directive 92/96/EEC". Companies are required to hold technical provisions equal to the minimum guaranteed surrender values calculated at the level of the reinsurance contract, where applicable. They are also required to hold reserves for any liabilities that might be incurred if the contract is terminated by the cedant, for example the elimination of negative reserves. From year end 2007, life reinsurance business will also require a Statement of Actuarial Opinion.

Interestingly the non-life solvency rules are the default basis for life reinsurance business, although the Financial Regulator has applied alternative rules for particular lines of life business – effectively only Class I business falls under the non-life solvency rules, and all other life business must hold the equivalent of the life solvency margin basis. The minimum guarantee fund is €3 million for life reinsurers, which reduces to €1 million for captives.

Where the life reinsurance company writes either finite or financial business, a supplementary return is required, as detailed below.

3.4.3 Finite Reinsurance – Life & Non-Life

Finite reinsurance is clearly defined in both the life and non life consultation papers as "reinsurance under which the explicit maximum loss potential, expressed as the maximum economic risk transferred, arising both from a significant underwriting risk and timing risk transfer, exceeds the premium over the lifetime of the contract by a limited but significant amount, together with at least one of the following two features:

i) explicit and material consideration of the time value of money
ii) contractual provisions to moderate the balance of economic experience between the parties over time to achieve the target risk transfer"

The guidance also determines exactly what a contract is defined as, so as to deter the use of side letters or mirror reinsurance transactions.

The guidance requires a finite reinsurer to submit a return to the Financial Regulator that is supplementary to the relevant non-life / life / composite return. This supplementary return has increased disclosure in the areas of:

- Asset Concentration
- Liquidity and Credit
- Catastrophe & Aggregation
- Contract Classification
- Business Diversification

For life business, there are disclosures in the areas of:

- Liquidity & Credit
- Treaty Risk
- Concentration Risk
- Operation Risk
- Contract classification

There are also new guidelines on policy wordings and conditions. The interesting piece, however, is the inclusion of an "Augmented Solvency test" in place of Solvency I requirements. The minimum augmented solvency margin for a non life finite reinsurer is now defined in terms of an asset charge, an underwriting charge and an operational charge. The charges are set down by the Financial Regulator in a similar fashion to the ICA model in the UK, and vary by line of business, type of asset and risk transfer element. The investment charge is equal to the sum of the Asset Risk Factors (prescribed) multiplied by the market value of the relevant assets covering the technical provisions. The underwriting charge is a function of the premiums and reserves of the company and the *funding %* of the reinsurance contract, as well as prescribed reserve and premium risk factors. The operational charge is defined as a fixed 20% multiple of a function of the premium, reserves, funding % and premium and reserve risk factors. As previously mentioned, it is no longer necessary to add back the discount component when calculating the available solvency margin.

For life finite reinsurers the augmented solvency margin is calculated based on a series of pre- determined stress tests relating to:

- Asset risk
- Mortality risk
- Morbidity risk
- Lapse risk

The solvency capital required for each stress test is the positive difference between the assets and liabilities before the stress test less and that after the stress test. Stress tests do not consider management actions. The Financial Regulator has prescribed correlations between the various stress tests in order to calculate the overall solvency requirement. However, the company may employ different correlations, provided that they can be justified. There will be a minimum solvency margin from year end 2007, but this will be decided based on the results of additional disclosures obtained for the year end 2007 return.

Companies can now use internal models to calculate the required solvency margin, although it is at the discretion of the Financial Regulator to approve such models. Currently the guidance only allows for the use of an internal model for calculation of the minimum solvency for finite business and not traditional business. This should prove popular given the onerous €50 million minimum guarantee fund imposed on finite reinsurance, compared to the €3 million required for traditional reinsurance.

3.4.4 Financial Reinsurance

The regulator defines financial reinsurance as reinsurance where there is not a sufficiently significant amount of underwriting or timing risk transfer to be classified as finite reinsurance or there is no underwriting or timing risk transfer, but only financial risk transfer.

Similar to the finite reinsurance business, reinsurers are required to submit a supplementary return to the Financial Regulator for their financial business. In many cases, reserves are zero and therefore under solvency I rules, no solvency margin would apply. However, under new guidance, reinsurers must carry out the augmented solvency test on their financial reinsurance business, where the Solvency I margin is deemed to be zero. Premium and reserves can be obtained by "looking through" the contract. Both the technical provisions and solvency margin should also be included in a non life SAO, where it relates to non life business. Note that in this case the minimum guarantee fund is €3 million. There is also a code of practice and a number of increased disclosure requirements relating to:

- Contract classification
- Financial risks facing the business as a result of transacting financial reinsurance
- Provision of business breakdown by geography, type of contract and class of business

The rapid implementation of the reinsurance directive may prove to be an added boost to the economy, by maintaining the Irish economy as an attractive destination for foreign direct investment. Companies may be attracted here by the decision and ability of the industry to implement the reinsurance directive before other European counterparts. Only time will tell.

SUMMARY

- ❖ Statement of Actuarial Opinion (SAO) now required by both Life and Non-Life reinsurance companies.
- ❖ Life reinsurance companies must also supply a copy of the company's retrocession strategy and a report on the life reinsurance business if material.
- ❖ Supplementary regulatory returns required for finite reinsurance and financial reinsurance business.
- ❖ Solvency I replaced by "Augmented Solvency Test" for finite reinsurance business.
- ❖ New "Augmented Solvency Test" required for financial reinsurance business.

4 Life Insurance

A lot of developments in EU-wide regulation of the life insurance industry have already been outlined in the common Life and General section.

In addition, the Society of Actuaries in Ireland has been busy drafting new and amending existing guidance for members working in the life insurance industry. Guidance from the SAI is now laid down in Actuarial Standards of Practice or ASPs.

Companies continue to innovate with new products and some of the developments in this area in recent times are outlined below, including the ongoing success of Structured Products and the emergence of US-style Variable Annuities and GMXB products.

There has also been a flurry of activity in the European mergers & acquisitions market lately.

Here in Ireland the 2005 and 2006 Finance Acts brought about a number of changes in the life insurance industry including a change to the I-E tax system for business written prior to 2001 and the introduction of deemed disposals every 8 years on unit-linked gross roll-up business.

The topics covered in this section are as follows:

- Product Development
- Professional Issues
- Mergers and Acquisitions – Corporate Activity
- Legislation
- UK Issues
- Developments in the Irish Health Insurance Market

4.1 Product Development

Several new products have been developed for the insurance and investment markets in recent years.

An overview of the following major product developments is considered below:

- Structured Products
- Constant Proportion Portfolio Insurance
- Variable Annuities

While the market share of these products in Ireland is still low these products are expected to become more common in future years. In addition this section also gives an update on the current SSIA market.

4.1.1 Structured Products

Structured products have become important in Ireland in recent years. Structured products are typically based on derivatives whilst offering capital protection if held to maturity. The most common example of a structured product is a Tracker Bond, which typically consists of a zero coupon bond to guarantee return of premium at maturity and a call option to provide (upside) exposure to an equity index.

Structured products are attractive to consumers who want exposure to equity markets but with an investment guarantee. The estimated amount of structured business written in Ireland in 2006 is €2.5bn, which was about double that of 2005. It's thought that maturing SSIA's were partly responsible for the increase as providers made more products available to capture this market. It is estimated that there was a total of about €8.7bn invested in structured products at the end of 2006. The majority of Irish products provide full capital protection whilst offering uncapped or capped call-style payoffs based on various international equity and/or property indices. They tend to be tranche products, i.e. products which are available for a limited period and have a fixed maturity date. However, there are a small number of open-ended products available. All of the products currently available are growth products, but some offer income as well as growth. At the moment, most structured products have a six-year term, however terms of four and five years are also popular. Not surprisingly in Ireland, the last few years have seen increased interest in products linked to property, in particular the European Property Real Estate Association (EPRA) Index. A number of commodity-linked products have also been made available. It is interesting to note that so far there have been few products linked to emerging markets like India and China. *Source: Arete Consulting.*

4.1.2 Constant Proportion Portfolio Insurance (CPPI)

CPPI products have also become popular in recent years in Ireland. They too provide an investment guarantee and participation in an underlying index. The investor must choose a floor for the portfolio value, i.e. a value below which the portfolio cannot fall in order to support the investment guarantee. The difference between the floor and the amount of the investment can be thought of as a cushion and the CPPI strategy is then to keep exposure to risky assets as a constant multiple of the cushion.

For example, say that for an investment of €100 the floor is €90 and the multiplier is 5. This implies that 5*(100-90) = €50 should initially be invested in risky assets and the remaining €50 in cash. If we assume that the value of the risky assets subsequently falls by 10% so that they are now worth €45, then the value of the portfolio is €95. Therefore, the portfolio needs to be rebalanced so that 5*(95-90) = €25 is invested in risky assets. The €25 of risky assets that are sold will be invested in cash.

In this way it can be seen that risky assets will be sold when they are falling in value and vice versa, i.e. the strategy should do well when markets are rising as the equity exposure increases and it should do at least as well as the floor in a falling market. However, it should be noted that there is a risk that the market could drop substantially before the investor is able to rebalance the portfolio and could therefore underperform the floor. There is also the issue of "cash locking" whereby the rebalancing during times of market falls effectively changes the nature of the fund into a cash fund, but then is positioned to reenter the equity markets if and when they start increasing again.

4.1.3 Variable Annuities and GMXBs

4.1.3.1 Introduction

The last few years have seen the introduction of US style variable annuity products to the European market. Ireland has been at the forefront of the growth in this product area with a number of companies now operating from here and selling into Europe on a cross-border basis.

Variable annuity contracts are unit-linked investment policies with guarantees. The term GMXB is often associated with variable annuities – this refers to the range of guaranteed benefits attached to variable annuity products. The guarantees that are usually offered include:

- Guaranteed Minimum Accumulation Benefit (GMAB)
- Guaranteed Minimum Income Benefit (GMIB)
- Guaranteed Minimum Withdrawal Benefit (GMWB)
- Guaranteed Minimum Death Benefit (GMDB)

A typical structure for a variable annuity with guarantees is as follows:

- A unit linked investment product with a range of underlying unitised funds.
- Single premium is more common than regular premium.
- Surrender values are based on the value of units, possibly with a surrender penalty.
- The guarantees are often presented as riders that give certain minimum payments in certain circumstances (death) or at certain times (e.g. maturity, survivorship past age 65) in addition to the base unit linked product.
- The policyholder is typically given a choice of funds with varying proportions invested in equities/bonds (up to levels typical for aggressively managed funds).
- The charges for the guarantees are normally explicitly identified. The charge will also probably vary in line with the equity proportion.
- The charges for the guarantees are often the same for all ages and sex of policyholders.
- A ratchet is another feature that is often seen on these products. If the fund value is above the guaranteed benefit on a policy anniversary then the ratchet would increase the guaranteed benefit to this level.

A GMDB protects the policyholder's death benefit from drops in unit value by guaranteeing a payment that is generally greater than the current unit value. GMDBs range from relatively low-risk return of premium guarantees (which have been available in the past on unit linked bonds) to a ratcheting increasing benefit that may increase at each policy anniversary.

A GMIB guarantees a minimum value for annuitisation, often based on the initial premium accumulated at a low rate of interest, an annual ratchet or some combination. The minimum value is converted to a payout annuity at guaranteed rates.

A GMAB guarantees that the policy surrender value will be a minimum amount at a given point in time (for example, the later of 10 years or attained age 70).

A GMWB is a relatively new guarantee that has attracted significant attention and sales. It guarantees that investors can receive their money back at an annual withdrawal rate (e.g., 5% per annum, regardless of market conditions and/or unit fund value).

In general, GMXBs provide payout floors contingent on events such as death, lapse or withdrawal. These guarantees can be thought of as complex put options with exercise prices based on the minimum guaranteed amount.

It is also common to see products which offer combinations of the above guarantees.

4.1.3.2 The Market

In the US the market for these products has grown rapidly with sales of approximately $155 billion in 2005. In 1990 the equivalent figure stood at $10 billion. They have also been introduced successfully to the Japanese market.

A number of large international insurers have recently set up in Ireland to sell variable annuity and GMXB business into Europe. These include the US based insurers the Hartford and MetLife, the French group AXA and the Dutch group AEGON.

These products are attractive to policyholders for a number of reasons, including:

- They offer the opportunity to participate in investment markets with the safety net of the guarantees in the event of market downturns or interest rate movements. This is especially important in the context of the high volatility experienced in recent years.
- The guarantees are flexible in that policyholders can decide which ones are valuable to them.
- They offer an attractive alternative to traditional annuity products because they can offer exposure to market growth (i.e. surrender values!) as well as guaranteeing a certain level of income for life.
- They also offer death and surrender benefits, two major features not offered by traditional annuities. These features mean that the products do not suffer, as annuities do, from the perception of poor value.
- They may be seen as an alternative to traditional with-profit which suffers from a perception of opaqueness.

4.1.3.3 Issues

Risks

GMXB riders have complex option-like characteristics. Traditional deterministic modeling cannot capture the risk profiles of the guarantees. Therefore, more sophisticated financial modeling capabilities are required, including stochastic scenario modeling. Stochastic modeling can reveal the distributions of claim costs and earnings and provide sufficient information to quantify the risk.

The generic risks vary by the type of GMXB provided, the main ones being:

- Market risk
- Mortality risk
- Policyholder behaviour risk including surrender rates, switching and take-up rates on options
- Operational risk

The overall risk exposure of a company selling GMXBs depends on its risk management strategy.

Reserving and Capital Requirements

Due to the complex nature of the guarantees there can be considerable difficulties in calculating reserves and capital for these products. Capital setting rules laid down by regulators vary but generally focus on the total capital requirement for a company. There is also a heavy reliance on the role of the Appointed Actuary – under the principles based regime of regulation in Ireland; it falls to the Board and the Appointed Actuary to quantify these risks. There are two main approaches used: VAR and CTE(X):

- VAR or Value at risk – this is a measure well known in the banking and derivatives industries. VAR is equivalent to expressing the desired percentile that you require capital to cover. For example, a company might be required to hold sufficient capital to cover the 99th percentile scenario over one year. This means that the company would have to project a number of scenarios, determine the relative order of the scenarios and hold sufficient capital so that in 99 out of 100 scenarios it would have sufficient capital to meet its liabilities.
- CTE(X) or "Conditional Tail Expectation" – this is where the capital requirement is set to equal the average of the worst (100 – X)% outcomes.

The computing resources required for setting reserves and capital levels for these products is considerable, especially where dynamic hedging is used. In this case "stochastic on stochastic" projections are required in order to value the progression of the hedging instruments and guarantee liabilities through each scenario.

4.1.3.4 The Future

Life companies are increasingly looking for a way to increase their share of the savings and investment market, and offering guarantees such as GMXB's are a major differentiator in a market crowded by fund managers, boutique investment houses and banks.

The rapid development of this market in the US and Japan suggests that GMXB's could rapidly develop across Europe. The existing European cross-border market for life insurance is an ideal structure to allow companies establish one life company to provide the guarantees, yet gain access to a large enough market to make the costs of hedging economically viable.

4.1.4 SSIA's

The final set of government top-ups on SSIA accounts were made at the end of April 2007. Some public controversy arose in the lead up to the maturities of these accounts as a number of life companies changed their unit pricing bases to a so called "bid basis" on SSIA's invested in unit linked funds.

The basic principle of a unit linked fund is that the fund's underlying assets are apportioned into units, such that the total face value of the units (number of units multiplied by the unit price) equals the fund's net asset value. Funds are managed with an overall principle that no single unit holder should be affected by the transactions of another unit holder. This equality between unit values and asset values is maintained through the creation of units at the prevailing purchasing (offer) unit price when policyholders contribute monies and the cancellation of units at the prevailing selling (bid) unit price when policyholders withdraw monies. As there can only be one unique price each day, this is achieved by valuing the total fund on either a creation or cancellation basis. The basis typically changes as the total cashflow of the fund changes direction – i.e. bid when the fund overall is cancelling units, and offer when the fund overall is creating units.

Setting the pricing basis of unit funds in a life company includes a certain level of subjectivity and judgment. There is no single unit pricing methodology that adheres to a "correct" formula. For example, the reflection of transactions costs (both buying and selling) in the unit price can require judgment. The thresholds for switching pricing basis also require judgment – a fund that has a history of expansion may decide not to switch to bid basis for an individual day cancellation that is relatively small.

At the time of the SSIA maturities it was deemed appropriate by some life companies to change from an offer pricing basis to a bid pricing basis in order to protect investors who remained in the funds from the exodus of policyholders as the government top-ups ceased. The outflows were so great from some funds that managers would be forced to sell underlying investments. The transaction costs involved (as high as 3%) were then reflected in the unit prices by some life companies. The ensuing debate then centred on whether the life company benefited from the change in pricing basis (it did not), or whether this was a cost that the life companies could have anticipated and either mitigated using investment derivatives, or disclosed to policyholders as a potentially likely scenario (jury still out on this one).

SUMMARY

- Continued development of flexible products allowing consumers to manage the level of risk of their investment.
- Structured products and CPPI products provide an investment guarantee while allowing exposure to investment markets.
- Variable annuity products are unit-linked investments with guaranteed benefits – the range of guaranteed benefits includes minimum death, withdrawal, income and accumulation benefits.
- Variable annuities now sold from Ireland on a cross border basis.
- Final tranche of SSIA's matured in April 2007.

4.2 Professional Issues

With effect from 30 December 2006, the Society's guidance notes have been renamed "actuarial standards of practice" (ASPs). The ASPs are numbered separately within each practice area, and are classified as either "Mandatory" or "Recommended". The following summarises some of the more important changes to the ASPs in recent months:

4.2.1 ASP LA-1 and ASP LA-3

ASP LA-1 Appointed actuaries and life assurance business
ASP LA-3: Additional guidance or Appointed Actuaries on valuation of life assurance business

These ASPs replaced the old "GN1(ROI): Actuaries and long-term insurance business" and "GN8(ROI): Additional guidance for Appointed Actuaries", respectively. These revised standards have been constructed to reflect the following:

- Some of the recommendations from the reports of the Society's Valuation Regulations Working Party and the Expenses Working Party, and
- Explicit recognition of the decision-making role of the Board of Directors in relation to policyholders' reasonable expectations and of the advisory role of the Appointed Actuary in that area. Effectively, with regard to PRE, the Appointed Actuary should be primarily concerned with the reserving impact of PRE. The Appointed Actuary also must still advise the Board on PRE of unit pricing but the Board is responsible for any actions in this respect.

4.2.2 Other ASP's

4.2.2.1 ASP LA-4

In addition, a completely new ASP has been published in relation to policyholders' reasonable expectations. ASP LA-4: "Additional guidance for Appointed Actuaries on policyholders' reasonable expectations" sets out the Appointed Actuary's responsibilities in relation to interpreting policyholders' reasonable expectations for the purpose of making a valuation of the Company's life assurance liabilities. It provides guidance as to the advice to be provided by the Appointed Actuary to the Board in relation to his or her interpretation of policyholders' reasonable expectations, in particular relating to:

- the impact of policyholder communications and policy projections on policyholders' reasonable expectations; and
- The basis on which the Company exercises any discretions that it has in relation to policy conditions.

As before, the Appointed Actuary must advise the Board of his/her interpretation of PRE.

There is now an explicit requirement to take into account any legislative requirements in local markets that "confer entitlements on policyholders beyond those provided for in the policy terms or that impose constraints on policy terms or on the exercise of discretion by the company in applying policy terms". In this regard, the Appointed Actuary may rely on the company to provide information on any such local legislative requirements, if any, and to confirm that it has complied with such requirements.

4.2.2.2 ASP LA-5

ASP LA-5, which replaced GN5(ROI), provides guidance for actuaries advising life assurance companies that are subject to prudential supervision outside the Republic of Ireland. In accordance with the Professional Conduct Standards (PCS), it applies if the jurisdiction in which the life assurance company is supervised is not one for which an International Actuarial Association (IAA) member association has published relevant guidance. It is classified as recommended practice. It was written having regard to the current UK GN5 and with a view to consistency with the ASPs relating to appointed actuaries of life assurance companies that are supervised in the Republic of Ireland.

4.2.2.3 ASP LA-8

The old GN22 has been replaced by ASP LA-8: Life assurance product information. This ASP has also been updated to take account of the requirements of the Consumer Protection Code in relation to the provision of a Key Features Document for tracker bonds. Specifically, the Consumer Protection Code provides that "where the information required by the Key Features Document is already provided to the consumer under a legal requirement to do so, the regulated entity is not obliged to include that information in the Key Features Document". The objective in constructing the Tracker Bonds section of ASP LA-8 was that all the information required in the Key Features Document would be contained in the life assurance disclosure documents for life assurance tracker bonds, and that, consequently, a separate Key Features Document would not be required for life assurance tracker bonds.

In addition, a number of other amendments have been made to the ASP, for consistency with other recent changes to life assurance ASPs, to reflect recent tax changes, and to address some practical issues encountered in the application of the ASP to premium increases.

4.2.2.4 ASP PRSA-2

GN31A(ROI) – renamed ASP PRSA-2 – has been amended to reflect a change in the PRSA Disclosure Regulations removing the requirement to project at a fixed rate of 6% in the case of PRSAs following a Default Investment Strategy.

4.2.3 Duties of the Appointed Actuary

The Society recently issued a note on the duties of the Appointed Actuary to all Appointed Actuaries. The purpose of the note was to set in context the revised Actuarial Standards of Practice LA-1 and LA-4 issued recently. Appointed Actuaries were encouraged to bring this note to the attention of their Boards.

The Society is also preparing an updated version of the explanatory note on the role of the Appointed Actuary which it issued in 1995 to inform life assurance company directors and other interested parties about the role of the Appointed Actuary

SUMMARY

- ❖ Board of Directors responsible for decision making in relation to policyholders reasonable expectations (PRE).
- ❖ Advisory role for Appointed Actuary in relation to PRE.
- ❖ New ASP (ASP-LA-4) provides guidance to the Appointed Actuary when advising the Board of his or her interpretation of the PRE's.
- ❖ ASP LA-8 (formerly GN22) updated to take account of the Consumer Protection Code requirements for a key features document for tracker bonds.

4.3 Mergers and Acquisitions – Corporate Activity

There were several significant M&A's in the European market amongst insurance companies in 2007. An overview of the main M&A activity follows:

- In the UK in July Friends Provident and Resolution agreed to merge to form Friends Financial Group PLC. The combined company would have a market value of £8.5bn sterling. However, throughout August there were rumours of potential counterbids – Axa SA, AEGON NV, Zurich Financial Services, Swiss Re and Prudential were all mentioned as potential candidates.
- In July British Bank Lloyds TSB Group announced it was selling its Abbey Life business to Deutsche Bank of Germany for £997m sterling (€1.45bn). Abbey Life, which was part of the Scottish Widows unit of Lloyds TSB, was closed to new business in 2000 and managed £12bn sterling of assets in respect of 1.2m pensions policies at the end of 2006. This is the first insurance portfolio to be acquired by Deutsche Bank.
- German bank Deutsche Postbank announced in July that it was selling its life insurance units to Talanx, the third largest insurance group in Germany, for €550m. The deal includes a distribution agreement which will see Deutsche Postbank exclusively sell Talanx's life and accident insurance products through its branches.
- In June Italian composite insurer Fondiaria-SAI joined up with Banco Popolare di Verona e Novara and Banca Popolare Italiana to distribute its life assurance products under a 10-year deal. Fondiaria-SAI is Italy's third largest insurance company and this deal will greatly enhance its bancassurance capability. Bancassurance currently makes up over 60% of life insurance sales in Italy.
- Axa announced in June that it was finalising plans to sell its life and general insurance units in the Netherlands to SNS Reaal, a Netherlands bancassurer, for €1.75bn. The deal will see Axa leave the Dutch market, where it previously held about 4% of the total insurance market. SNS Reaal's share of the life insurance market is expected to increase from 6% to 11% following the deal while its general insurance market share will rise from 4% to 6%.
- In April Royal Liver Assurance announced they had begun merger discussions with Royal London, which is the largest mutual in the UK.
- In March HSBC agreed to purchase the remaining 50.01% that it does not already own of life insurer Erisa and property and casualty insurer Erisa IARD from Swiss Life for €228.75m. The companies offer insurance products through HSBC's French banking network.
- AXA announced in March that it was buying half of the insurance and pensions unit of Italian Banca Monte dei Paschi di Siena (BMPS) for €1.15bn. Axa's Italian subsidiary will offer BMPS products although it will remain as an independent company. The deal will see Axa become the sixth largest life insurer in Italy with 7% market share.

4.4 Legislation

In this section we discuss the main impacts of the Finance Act 2005 and 2006 on the Life Insurance Business for companies selling in Ireland.

4.4.1 Taxation of I-E Business

For business written prior to 2001 (I-E business) life companies are subject to tax at 12.5% on shareholders' profits and 20% on policyholders' profits. The Finance Act 2006 introduced an amendment whereby group losses can be offset against the shareholders' tax.

4.4.2 Deemed Disposal of Gross Roll-Up Life Business

The Finance Act 2005 introduced new deemed disposal rules for gross roll-up (GRU) unit-linked life assurance business. Previously such policies rolled-up free of tax until they were encashed. After some lobbying by the insurance industry the rules were relaxed somewhat and they eventually took effect with the publishing of the Finance Act 2006. Under the new rule any deemed gain after the end of each 8-year period from a policy's inception is subject to tax, currently at the rate of 23%. The tax paid under the deemed disposal rule is offset against any exit tax due on subsequent surrender or maturity of the policy. The new rule was introduced to prevent policies from deferring tax indefinitely and it applies to existing GRU business as well as new business. The Finance Act 2007 extended the rule to foreign life policies and also included a few technical amendments in relation to the calculation of exit tax on policies which have already paid some tax on previous deemed disposal events. A tax repayment is possible in the scenario where tax already paid exceeds the total tax payable at surrender or maturity assuming there were no deemed disposal events.

The new rules have numerous impacts on life insurance companies. Disclosure illustrations should already have been adapted to allow for the deemed disposals. In addition, companies will need to be able to start collecting the tax from 1 January 2009 which will almost certainly require modifications to administration systems. Companies should also consider the impact on profit reporting, for example, failing to allow for deemed disposals in unit fund projections could cause future management charge income to be overstated. Finally, there may be a need for some companies to reconsider product designs which were specifically aimed at deferring payment of exit tax indefinitely.

4.4.3 Deemed Distributions of ARFs

The Finance Act 2006 also introduced deemed distributions of Approved Retirement Funds (ARFs) to discourage such policies being treated as savings vehicles. For ARFs set up on or after 6 April 2000 a deemed distribution will be applied to the value of the assets held at 31 December each year. Any actual distributions during the year will be deducted from the deemed distribution and the net amount will be taxable at the individual's marginal rate of income tax. The new rule is being phased in over three years and the deemed distribution will be calculated as follows:

- - 1% of asset value at 31 December 2007
- - 2% of asset value at 31 December 2008

- - 3% of asset value at 31 December 2009 and each year thereafter.

If actual distributions exceed the deemed distribution then no tax is payable, as income tax will already have been paid on the actual distributions. The rule does not apply to Approved Minimum Retirement Funds (AMRFs) or to ARFs held by people under age 60.

The Finance Act 2007 amended the rule such that ARF managers will have an extra month to account to Revenue for any tax payable.

4.4.4 SSIA Roll-Overs into Certain Pension Policies

The Finance Act 2006 introduced special measures to encourage low earners to roll-over their maturing SSIA's into a PRSA. To qualify an individual had to earn less than €50,000 and have no income taxable at the top rate. For every €3 transferred to a PRSA, AVC or RAC the Government added a €1 bonus to a maximum bonus of €2,500. As well as this, the exit tax on the SSIA was partially waived thereby providing extra monies for the pension policy.

SUMMARY

- Finance Act 2005 introduced *deemed* disposals for gross roll-up unit-linked life assurance business(GRU) and deemed distributions for Approved Retirement Funds(ARFs).
- For GRU's exit tax on deemed gains has now been replaced with a tax on deemed gains every 8 years to prevent policies deferring tax indefinitely.
- For ARFs tax is levied annually on the greater of the actual drawdown from the ARF over the year and a minimum (3% from 2009) assumed drawdown.

4.5 Update on UK Actuarial Issues – Life Assurance

4.5.1 Changes in Valuation Rules

In September 2006 CP06/16 was published by the Financial Services Authority (FSA) in the UK. It proposed several changes to the way in which UK life assurers calculate their reserves:

- reserving for expenses that are not directly attributable to one particular contract may be done at a homogenous risk group level;
- prudent lapse assumptions may be used for all classes of long-term business;
- contracts that do not have a guaranteed surrender value may be valued as assets;
- the economic value of future transfers out of a with-profits fund may be recognised;
- the Resilience Capital Requirement is removed for firms that undertake realistic reporting.

Following consultation, the proposals were implemented with some clarifications and took effect from 31 December 2006. Each of these changes led to a reduction in reserving requirements. The changes have extended the realistic valuation regime to non-profits business and are also aligned with Solvency II.

4.5.2 Treating Customers Fairly

The principle of treating customers fairly (TCF) was first introduced by FSA discussion paper DP7 issued in June 2001. It applies to all regulated business of regulated entities and has six objectives:

1. "consumers can be confident that they are dealing with firms where the fair treatment of customers is central to the corporate culture;
2. products and services marketed and sold in the retail market are designed to meet the needs of identified consumer groups and are targeted accordingly;
3. consumers are provided with clear information and are kept appropriately informed before, during and after the point of sale;
4. where consumers receive advice, the advice is suitable and takes account of their circumstances;
5. consumers are provided with products that perform as firms have led them to expect, and the associated service is both of an acceptable standard and as they have been led to expect;
6. consumers do not face unreasonable post-sale barriers imposed by firms to change product, switch provider, submit a claim or make a complaint."

The FSA set some deadlines: firms had to have reached the implementation stage of their TCF programmes by March 2007, firms must be able to demonstrate that they are consistently treating their customers fairly by the end of 2008 and, in order to do so, it is expected that firms have appropriate management information or measures in place to test whether they are treating their customers fairly by the end of March 2008.

The FSA wants to see TCF firmly embedded in a firm's culture. Senior management are responsible for ensuring that their firm treats customers fairly and the FSA may take action against individuals if it is thought that senior management have failed in their TCF responsibilities. Companies have been faced with challenges similar to those faced by Irish companies when implementing the Consumer Protection Code.

4.5.3 Principles and Practices of Financial Management

Principles and Practices of Financial Management (PPFM) is a document that all UK with-profits insurers must produce since April 2004. It describes how they run their with-profits fund and it must be publicly available. The purpose of the document is for policyholders and advisers to better understand how their policies work and what they can expect from them. It also assists insurers in managing their with-profits business.

The information in a PPFM is split into principles and practices. Principles are high-level statements regarding the insurer's long-term approach to running its with-profits fund. Any change in principles must be communicated to policyholders three months in advance. Practices are more specific statements about how the fund is run and they would be expected to change more frequently than principles. Policyholders must be informed of a change in practices, but it can be after the change has taken place.

The PPFM is not actually designed for policyholders, however, each firm must produce a "customer friendly version" that should make the key statements easier to understand. Firms are required to disclose once a year to policyholders the extent to which they have complied with the PPFM. PPFMs are also required for closed with-profits funds.

The next potential area for PPFM is the unit-linked market – the Faculty & Institute of Actuaries in the UK has already formed a working party on this issue. It seems likely that the FSA will introduce some sort of PPFM for unit-linked business (with a consumer friendly PPFM to follow).

SUMMARY

- ❖ Regulated entities in the UK must be able to demonstrate that they are treating their customers fairly from the end of 2008.
- ❖ Since April 2004 UK firms with with-profit funds must provide a public statement of how they manage their with-profit business. The statement is known as the PPFM – Principles and Practices of Financial Management.

4.6 Update on Developments in the Irish Health Insurance Market

The health insurance market has often featured in the news over the past couple of years. The principle reason for this has been BUPA's high profile High Court challenge on risk equalisation in 2006, which was followed by several reports into the Private Medical Insurance (PMI) market in 2007.

Until 1997 the VHI (which is a state-owned body) was the only company providing PMI in Ireland. Competition was introduced in 1997, and by the end of 2006 VHI Healthcare's market share had dropped to 75%, while BUPA Ireland's was 22% and VIVAS Health's was 3%. At the end of 2006 about 51% of the population had PMI cover.

The PMI market is community rated, which means that an insurer must charge the same premium for the same level of cover to all customers regardless of age or health status. The community rating system is supported by regulations regarding open enrolment, lifetime cover, minimum benefits and risk equalisation.

The Risk Equalisation Scheme is designed to reduce the advantages that arise for health insurers with lower risk profiles compared to their competitors. For example, an insurer with a customer base with an average age of 35 would be expected to have a much lower risk profile than one whose customer base had an average age of 55. The Scheme facilitates cash payments from insurers with lower risk profiles to insurers with higher risk profiles. As BUPA Ireland only entered the market in 1997 it had a much younger customer base than VHI Healthcare and would therefore have been obliged to made risk equalisation payments to its competitor. In addition, it is interesting to note that the VHI did not have to satisfy the same prudential financial solvency requirements as the other insurance companies by virtue of derogations in the First and Third EU Non-Life Insurance Directives.

BUPA challenged the legality of risk equalisation in the High Court. However, in December 2006, it lost its legal action and decided to exit the Irish market. Quinn Healthcare subsequently took over BUPA's Irish business and soon made it known that it considered itself to be a new entrant to the market and, as such, would be exempt from risk equalisation payments for a three-year period.

In January 2007 the Minister for Health and Children appointed an expert group to examine the PMI market in Ireland, known as the Barrington Report. The main recommendations from this report were:

- Steps to be taken immediately to commercialise and regulate the VHI, and to mutualise it and arrange third party capital for it by the end of the first quarter of 2008;
- Government policy should encourage increases in the size, market appeal, innovation and competitiveness of the PMI market as a component of a quality healthcare delivery system;
- Community rating should continue to be applied to all insureds, but only to those

levels of their benefits deemed to provide adequate cover for most of the insured population and not to the additional coverage for higher levels of insurance;

- A simpler, more limited, more transparent and, possibly, prospective form of risk equalisation should be introduced that would not be regarded as a subsidy to the VHI;
- Consumer protection structures and regulations in relation to PMI need to be thoroughly overhauled.

Also in January the Health Insurance Authority (HIA) published its report "Competition in the Irish Private Health Insurance Market". Its principle recommendations were:

- VHI Healthcare should be regulated in the same manner as an authorised non-life insurer and should satisfy the relevant prudential solvency requirements as soon as possible;
- Minister approval for VHI premium increases should be abolished once its exemptions from the EU Non-Life Directives are removed;
- The HIA should have more control over the practices and products of health insurance undertakings and should have authority to increase awareness among the public of their rights as health insurance consumers;
- Unfunded lifetime community rating should be introduced;
- Extension of the three-year exemption from risk equalisation for new entrants should be considered;
- Certain information should be provided to policyholders at point of sale and with renewal notices;
- A Switching Code should be introduced to ease the process of switching health insurer;
- VHI Healthcare should comply with the Consumer Protection Code;
- The Minister should consider splitting the VHI into two companies to promote competition in the PMI market.

February 2007 saw the publication of the Competition Authority's report entitled "Competition in the Private Health Insurance Market" which made 16 recommendations including:

- VHI Healthcare's exemption from prudential regulation should be ended as soon as possible so that it becomes subject to the legal solvency requirements and corporate structuring rules that apply to other health insurers in Ireland;
- A package of measures should be introduced to provide consumers with useful and timely information to enable them to consider alternative private health insurance products, and to promote consumer awareness of the ease of switching health insurer;

- VHI Healthcare should discontinue its practice of cancelling its MultiTrip Travel Insurance when its members switch health insurer;
- The Minimum Benefit Regulations should be modernised and the HIA should be allowed to approve limited cover plans, to allow more innovation in the market;
- The HIA should be given wider powers to enforce the Health Insurance Acts and formally assigned the function of promoting the interests of consumers.

On 25 April 2007, as a result of this trio of reports, the Minister announced Government approval for a variety of reforms for the PMI market "to create a level playing field and enhance consumer choice". The main reforms were:

- The VHI should become a conventional insurer authorised by the Financial Regulator by the end of 2008. The Departments of Health and Children and Finance are to report to Government by mid-December 2007 on how this is best achieved;
- The immediate publication of a VHI Bill. On enactment it will allow the VHI to establish subsidiaries to operate its ancillary activities. This measure will also remove the remaining powers of the Minister in relation to product development, pricing etc;
- The VHI will be directed to comply with the Consumer Protection Code in the same manner as if it were an undertaking already regulated by the Financial Regulator;
- The amendment of the Risk Equalisation Scheme to give effect to the Health Insurance Amendment Act, 2007. This abolished the three year exemption from risk equalisation payments for new entrants. To encourage competition and new entrants, and having regard to proportionality, risk equalisation payments will be discounted by 20 per cent;
- The circulation of draft Lifetime Community Rating Regulations to insurers for consideration. These are designed to encourage people to take out health insurance at an early age by introducing loadings for later entrants;
- The HIA initiate a process of consultation with the health insurance industry and private healthcare providers on defining the level of health insurance which should be subject to community rating. The HIA will also be asked to look at the feasibility of introducing a prospective Risk Equalisation Scheme.

Quinn Healthcare is currently challenging the legality of the abolition of the three year exemption from risk equalisation payments for new entrants to the PMI market. However, it seems likely that, at least for the time being, risk equalisation is here to stay.

SUMMARY

- Irish Health Insurance market opened to competition in 1997.
- Principle of community rating applied to health insurance market – ensures that the same premium is charged to policyholders irrespective of health status or age.
- To ensure a "level playing field" among market providers VHI is to lose is exemption status from prudential regulation.
- Recommendations for information for customers to be improved allowing them to make more informed choices regarding their health insurance.

5 General Insurance

Section 2, Common Issues in Life and General Insurance, has already outlined the major recent developments in the regulation of the General Insurance and Reinsurance industry.

This section will look at the response of the Society of Actuaries in Ireland to the Gender Directive, introduced in Section 2, in the context of Irish specific General Insurance business.

The Irish General Insurance and Reinsurance sector has continued to expand in recent years and an overview of the main developments is provided in the market update section.

In addition as the Personal Injuries Assessment Board has now been in existence since 2003 we have provided a detailed update on its operations and successes since it came into being.

This section concludes with a look at the new requirements for quantifying uncertainty in the estimation of reserves for General Insurance business and the work to date in this area.

5.1 Market Update

Over the past few years the Irish non-life insurance industry has continued to feature prominently in the media and in political debate although for different reasons to 2003 and prior. 2004-2006 has seen significant falls in premium rates both in Motor and Liability rates. Despite these falling rates insurers have experienced record profits as surplus has emerged from earlier business years

Factors underlying the premium falls include the introduction of legislation by Government that has curbed the spiraling claims costs of 2003 and prior. These include:

- Establishment of the Personal Injuries Assessment Board - 2003
- Introduction and extension of the penalty points system 2002 -2006
- Introduction random breath testing – 2006
- Road Safety Council
- Actions to combat insurance fraud
    - Criminal Justice Act 2001
    - Civil Liabilities & courts Act 2004

Irish non-life insurers have made significant profits since 2002 and only in 2006 is the upward curve on the motor insurance underwriting cycle beginning to turn downwards. Even though the underwriting cycle has turned there continues to be downward pressure on premium rates through competition between the leading players for market share. The most notable feature of the motor insurance market has been the emergence of Quinn Direct as one of the major players. The company has seen its market share by Irish Risk Earned Premium Income grow from 5.9% in 2002 to 11.1% in 2006. In the Motor market this growth in market share has gone from 9.8% to 17.4% in the same period. Some might say that this growth has been at the expense of profitability but the accounts of Quinn Direct would refute this as they continue to show very positive underwriting profits.

The introduction of the PIAB and the strengthened anti-fraud legislation has encouraged a position in the market where insurance companies have been able to bring forward settlement patterns both by number and amount from the position in the late 90's.

Other developments in the industry that have occurred in the period 2004-6 include:

- Consolidation IFSRA as the Financial Regulator
- Introduction of new solvency and capital adequacy guidelines relating to EU Non-Life Directives
- Full application of the requirement of Statements of Actuarial Opinion (SAO) for non-life Insurance Companies

- Irish implementation of the EU Reinsurance Directive and the extensions of SAO's to non-life Reinsurance Companies

Following the Financial Regulators decision to go for early implementation of the Reinsurance Directive the first phase of implementation for Reinsurance Companies has taken place. The second Phase which extends the regulation to include SAO's for reinsurance captives comes into effect at 31 December 2007.

The 2004-2006 period has also seen the buildup of the Solvency II project and the CEIOPS Quantitative Impact Studies. Irish involvement in the initial stages has been minimal but companies are now starting to take much more notice of the process. This project will have a major impact on the non-life reserving practices with the move towards a time value discounted best estimate approach. Actuaries will have the opportunity to extend their involvement beyond the traditional reserving and pricing roles as the risk analysis and risk quantification required by Solvency II extends to all aspects of the business of a non-life insurer.

5.2 Gender Directive

An overview of the Gender Directive and its implications for Life and General Insurance business was given in section 2.3 of Common Issues in Life and General Insurance. This sections looks at those aspects of the directive that are specific to General Insurance business.

5.2.1 Motor Insurance

In a report dated 06 April 2004, The Society of Actuaries of Ireland stated that gender could be considered a determining factor in the assessment of risk where "even after other measurable factors have been taken into account, gender remains a significant predictive factor (i.e. there is an irreducible risk due to gender and that gender is not a proxy for other factors)". Industry data clearly identifies gender as a key determinant in the assessment of motor insurance premiums. The report suggested that Ireland should continue to allow differentiation of insurance premiums and benefits between males and females for motor insurance. The minister accepted this proposal.

As previously mentioned, part of the requirements of the Directive involve the publication of the statistics that justify the differential in premium rates. This task has been allocated to the Financial Regulator. The report suggests data similar to that produced by the MIAB, Financial Regulator and Department of Health would be sufficient if they were collated and published together and made available to the public. The data would need to be validated and given an expiry date. Some issues to consider might include:

- In a price sensitive market such as motor insurance, this could seriously reduce the competitiveness of the market. The extent of this will obviously depend on the granularity of the published data requirements (will it be company specific or aggregated?)
- By requiring data to be published, it also begs the question as to whether insurers might be able to use information gained from the anticipation of trends in setting premium rates. Even if this is allowed, publication of such data could reduce competitive advantage if individual company information was available.
- Furthermore, if basic gender differentiation statistics are published by the Regulator, it is possible that this could lead to further confusion by the public. For example, there is unlikely to be a direct linear relationship between the statistics published by a company and that used by the company for a specific risk. This could be due to any number of other rating factors, such as type of cover or car, or the aggregation of data. If the published data relates to claims costs rather than premium rates, expenses, investment income and tax might distort the tables. It might be necessary to publish some sort of standard explanation to accompany such data or indeed, for each company to prepare their own explanation as to why the published rates differ from those charged.
- Will gender targeted marketing be permitted (e.g. Sheila's wheels)?

- Will acquisition costs be allowed to be spread differently by gender based on different persistency rates between men and women?
- How many years of data will be required?
- Will tables consider the case where there is more than 1 insured person of different gender? How will this be easily explained to the lay person?

Another significant issue surrounding the provision of data is the restriction of new product types into the market, as specific derogations need to be specified when the Directive comes into force. It suggests that stringent data requirements might hinder product development within the market going forward. The working party's solution was to define motor insurance in sufficiently broad terms so as not to exclude future innovation within the market. The suggested definition was that currently used in Irish legislation:

Motor Insurance business is defined in Annex 1B of the European Communities (Non Life Insurance) Framework Regulations, 1994 (S.I. 359 of 1994) as follows:

"Description of authorisations granted for more than once class of insurance where the authorisation simultaneously covers…:
(b) Classes Nos. 1 (fourth indent), 3, 7 and 10, it shall be named "Motor Insurance", "

Annex 1A provides the following classification of risks according to classes of insurance:
"

1. Accident
    - injury to passengers
2. Land Vehicles (other than railway rolling stock). All damage to or loss of
    - Land motor vehicles
    - Land vehicles other than motor vehicles
3. Goods in transit (including merchandise, baggage, and all other goods) All damage to or loss of goods in transit or baggage, irrespective of the form of transport.
4. Motor vehicle liability. All liability arising out of the use of motor vehicles operating on land (including carriers liability)"

5.2.2 Travel Insurance

The working party also noted that many travel insurance policies do not cover pregnancy related costs, or provide restricted cover for pregnant women. Common exclusions from cover include cancellation because of pregnancy or childbirth and claims arising directly or indirectly from pregnancy within the last few months of the estimated date of delivery. This could be considered as unfavourable treatment for pregnant women and therefore in direct violation of the requirement not to discriminate in the provision of insurance benefits on the grounds of gender. The working party felt that it did not have sufficient legal expertise to make such a conclusion and recommended that further legal advice be sought. The implementation of this specific Article has been deferred until 2009.

SUMMARY

- ❖ 2004 report from the Society of Actuaries in Ireland suggests that Ireland should continue to differentiate between males and females for the purposes of motor insurance.
- ❖ Statistics justifying the differentiation should be published by the Financial Regulator.
- ❖ Possible implications for travel insurance which have pregnancy related exclusions – decision deferred until 2009.

5.3 Update on the Personal Injuries Assessment Board (PIAB)

5.3.1 About the PIAB

The Personal Injuries Assessment Board ("PIAB") is an independent statutory body which assesses the amount of compensation due to a person who has suffered a personal injury. The PIAB was set up with aims of reducing the cost of delivering compensation and reduce the time to deliver compensation, without compromising the level of compensation awards. Under the PIAB Act 2003 all claims for personal injury (excluding medical negligence) must be submitted to PIAB. At present, the PIAB deals with victims of Workplace, Motor and Public Liability accidents. Awards are based on the "Book of Quantum" which contains a range of compensation figures for particular injuries that are based on existing levels of compensation. In addition, claimants are likely to be entitled to Special Damages which cover loss of earnings, medical expenses and other vouched out of pocket expenses. This assessment is provided without the *need* for the majority of current litigation costs, such as Solicitors, Barristers and Experts fees, associated with such claims. These significant costs had contributed to the high cost of insurance in Ireland for both consumers and the business community. PIAB is mainly funded by fees payable by Respondents (those who pay the compensation). The first cost – benefit analysis of the PIAB has just been completed and the outcome is very favourable.

5.3.2 Cost-Benefit Analysis

Cost Reductions

PIAB currently delivers compensation at a delivery overhead which equates to a less than a 10% addition to the actual compensation amount as opposed to an addition of, on average, 46% under the old system (based on the work of the Legal Costs Working Group). Average costs associated with a claim are €1330, and is a fairly fixed amount, compared to the previous regime. Under the old system, costs were a % of the awards and would depend on which court heard the case, how long the case lasted, how many expert witnesses were called and whether liability was contested or not. Savings generated by the PIAB to October 2006 are estimated at €24M, based on the 3,137 awards that were accepted by both parties (i.e. not contested). This represents an 88% saving on the previous regime for a typical case that would have previously been subject to Circuit Court proceedings and an on average 97% saving on a case involving High Court proceedings. Note that over 90% of claimants are now represented by solicitors post the O Brien – v- PIAB case, which is currently under appeal at the Supreme Court. Prior to this, only 50% opted for a solicitor. The cost benefit analysis did not consider the costs incurred by the claimant in retaining such legal expertise.

Although we know premium rates have fallen since inception of the PIAB, it remains to be shown whether cost saving has been passed onto consumers, as it is difficult to isolate the effect of the PIAB in any insurance index. There are many factors both national and international that affect the trends in premium charges and one would require analyses of insurers' raw data before drawing specific conclusions. Arising from recommendations of the Competition Authority on the detail of published data for the Irish insurance market, the Financial Regulator is currently undertaking a Regulatory Impact Analysis so more comprehensive analyses may be possible in the future.

As previously mentioned, the cost of insurance has declined since the inception of the PIAB. Indeed the decline started in 2002, before the PIAB. The most recent analysis by the Financial Regulator of raw data from motor insurers relates to the position at year-end 2004 of claims costs relative to premium income. During 2004 average premiums fell by 18% for comprehensive cover and by 16% for third party fire and theft cover. This followed a period of rapidly rising premiums, which grew by 45% for comprehensive cover and by 70% for third party fire and theft cover between 1997 and 2003. Future such analyses by the Financial Regulator will indicate to what extent savings have been reflected in premium rate trends and the time lag between the two development patterns. A similar pattern can be observed from the cost index produced monthly by the Central Statistics Office. This shows that the cost to consumers of motor insurance has fallen by 20% on average since the inception of the PIAB and by 32% since a peak in April 2002. At the time of the publication of the 2002 MIAB report, the Central Statistics Office (CSO) index for motor insurance stood at 108.8 compared to 74.0 in November 2006. This represents a 32% decrease on average.

In future years, the volume of cases being dealt with by the Board will increase dramatically as the Statute of Limitations 2004 takes effect. Thus the total savings will be many multiples of the €24 million savings to date. As the new Statute of Limitations 2004 allows only two years in most cases for proceedings to be issued it seems highly unlikely that such a volume of cases are waiting in the background to commence litigation and it is therefore reasonable to assume that the vast majority have been finalised directly between the parties at this stage.

Processing Time

The PIAB aims to complete the assessment within a statutory nine-month period from consent to the process. In the year to October 2006, the average time lag from application by the claimant to award being made was nine months, with 90% of claims processed within 12 months. This is substantially less than the average of 36 months it took to process a claim through the courts (see the McAuley report 1999). In addition to this, there has been a reduction in the volume of litigious cases. Since its introduction, the number of writs has reduced from 33,000 to 4,000

Compensation Levels

Under the Civil Liability Act 2004, the judiciary is required to have regard to the Book of Quantum published by PIAB since this reflects the reality of compensation data compiled on various injury types. So there is consistency between those awards given by the PIAB and those given by the courts. The Book of Quantum is merely a consolidation of existing case law and industry practice. No attempt was made to impose lower rates of compensation. Claimants also have the right to reject the PIAB's evaluation of their case. They are then free to instigate legal proceedings in the same way as before. In reality nearly 90% of claimants in the PIAB process are represented by solicitors but only 29% of claimants are the sole source of award rejection. To date 37% of the PIAB's decisions have not been accepted by either party. At the time of writing, most of these cases have not yet become the subject of litigation and it is possible that many have since been resolved between the parties. At some future date it will be possible to analyse a body of data on Court awards in cases where the PIAB assessment was not acceptable to one or more of the parties and establish whether on a like for like basis the ultimate cost was higher or lower. In any case, it appears that the vast majority of claimants, including those who have retained legal and other experts, think that the PIAB's assessment is reasonable.

5.3.3 Award Details

During 2006, the PIAB made awards to accident victims to the value of €115.3million. This is a 600% increase on the 2005 figure of €16.3million. PIAB projects it will make awards to the value of c. €170 million in 2007 and will deliver annualised savings in processing costs of c. €40million. €228.3M worth of assessments have been issued up to Q2 2007, with €132.3M accepted at that time, so it looks like the PIAB are on track to meet their projections for 2007.

The average award accepted by claimants in 2006 was €19,610 and the highest award accepted was €408,415. Awards in the Employer's Liability category (i.e. from workplace accidents) were highest at an average of €23,141. PIAB conducted an analysis of these workplace accidents to determine the causes of the accidents and the occupations of those injured. Of those claiming compensation for accidents in the workplace, general labourers represent the highest proportion accounting for 33%. Injuries sustained while operating machinery resulted in the highest average compensation by accident type at €30,159. The highest accepted award made by PIAB in 2006 was €408,415. In Q1 2007 however PIAB's highest accepted Award was €542,230.

SUMMARY

- Significant reduction in costs and processing time of personal injury cases since the establishment of the PIAB in 2003.
- Compensation awards based on "Book of Quantum" which contains a range of compensation figures for particular injuries.
- Premium rates have fallen since the inception of PIAB but further analysis required to determine the extent to which the reduced premium rates are related to the work of the PIAB.

5.4 Professional Issues

5.4.1 Quantifying Uncertainty in Reserves

General Insurance actuaries are now required under ASP GI-1 to quantify the uncertainty, where practical, on their reserve estimates. By quantifying the uncertainty in reserve estimates the uncertainty can then be included in the pricing process and when estimating the volatility of future profits

Overview of ASP GI-1 (General Insurance Business: Actuarial Reports)
The purpose of ASP GI-1 is to give guidance on the circumstances in which a member should normally prepare a formal report in the field of general insurance, and to describe the basic elements that should normally be included in such a report. It states that:

"The report should normally indicate the nature, degree and sources of uncertainty surrounding the results and sensitivities to key assumptions. Uncertainty should normally be quantified where practicable, but otherwise should normally be reported using an appropriate descriptive summary".

The UK guidance note corresponding to ASP GI-1 is GN12.

UK Reserving Oversight Committee's Interpretation of GN12
In August 2007, the Reserving Oversight Committee (ROC) of the Actuarial Profession produced a paper on the "Quantification and Reporting of Uncertainty for GI Reserving".

The main points from this paper, which refers to GN12, are as follows. The views are also relevant to ASPGI-1.

The current version of GN12 was drafted during the consultation process on the General Insurance Reserving Issues Taskforce (GRIT) paper (A Change Agenda for Reserving presented to the Institute of Actuaries in March 2006) and had regard to the GRIT recommendations. GN12 requires that actuaries should normally quantify uncertainty where this is practicable, and leaves the actuary to make the judgment of when it is practicable to do this. The following sets out the ROC's views on how this should be interpreted in practice:

Where GN12 applies the actuary should, in nearly all cases, illustrate the uncertainty in the eventual outcome of the ultimate claims with a numerical quantification (the 'Quantitative Illustration') which the actuary considers appropriate. The actuary should also provide a qualitative description of uncertainty.

There should only be a small number of exceptional instances where a Quantitative Illustration of uncertainty is not supplied, and this should be where there are specific reasons for deeming it inappropriate to supply an illustration. If a Quantitative Illustration is not provided the actuary should explain why he has decided not to supply it.

The Quantitative Illustration of uncertainty should be in a form that the actuary considers most appropriate in the context of the scope and purpose of the work to demonstrate the potential for material adverse (or favourable) deviation.

Describing the Causes of Uncertainty

Communicating uncertainty should enable users of actuarial reports to understand the nature as well as the size of this uncertainty. A quantitative illustration of uncertainty is useful only if it helps users understand what it means in terms of the results presented to them. As such, helping the user of the report to understand the context and implications of this numerical measure is as important as the quantitative assessment itself.

In order to do this, actuarial reports should disclose sufficient information on the key drivers of uncertainty. To this end, the actuary should normally accompany the Quantitative Illustration with a description of the sort of event, events or trends that would need to occur for the lower and upper limits of any ranges, specific points on a distribution, scenarios or illustrations produced by the actuary to be reached.

Methods Used to Quantify Uncertainty

There are, as yet, no universally accepted definitive methods for quantifying uncertainty in outcomes, so the actuary will need to use a degree of judgment when selecting the most appropriate approach for estimating uncertainty.

GN12 is not prescriptive about the methods that should be employed by the actuary when quantifying uncertainty, however in one or some combination of the following approaches should normally be used:

- Judgmental/Indicative Volatility
- Scenario/Stress Testing
- Statistical Methods

A statistical methodology is not always appropriate and a judgmental approach based on the actuary's knowledge of the account and experience of the relevant wider market issues may be the most practical approach.
In choosing the approach to quantifying uncertainty the actuary may also have regard to the costs and benefits involved.

Practical Approach to Communicating Uncertainty

The numerical quantification of uncertainty will generally need two components corresponding broadly to size and likelihood. The size component is usually stated explicitly, and the likelihood component can generally be communicated in two ways:

- Everyday English
- Percentiles

The actuary should consider the appropriate choice between Everyday English, percentiles, or a combination when communicating uncertainty.

Conclusion
Overall the paper tries to help the actuary in how to show a numerical estimate of uncertainty in any formal report wherever a point estimate of reserves is supplied.

5.4.2 ASP GI-3 SAO for Non-Life Reinsurance Business

The main purposes of ASP GI-3 can be summarised as follows:

- Guidelines issued by the Irish Financial Services Regulatory Authority requiring Statements of Actuarial Opinion (SAO) relating to non-life reinsurance business
    - SAO covers reserves held by the non-life reinsurance company
    - SAO covers the Statutory Minimum Solvency Margin held by the non-life reinsurance company
- SAO covers the retrocession programme put in place by the non-life reinsurance company
- Includes guidance on the preparation of the associated report linked to the SAO
- Includes information on the preparation of the Data Accuracy Statement (DAS)

The following specific points of interest should be noted in relation to ASP GI-3:

- Discounting of claims reserves is allowed by application by the non-life reinsurance company to the Financial Regulator however any allowance for discounting must be noted in the SAO, including the monetary impact
- The guidance acknowledges the potential lack of data faced by the Signing Actuary
    - "Many of the data and information sources available for use in reinsurance have some degree of imperfection."
- The guidance acknowledges the inherent uncertainty and the complexity of certain reinsurance contracts faced by the Signing Actuary
- The Signing Actuary is not required to allow for the emergence of unanticipated major new types or classes of claims however any historical tendency related to latent claims (in the absence of evidence to the contrary) should be assumed to continue
- The details of the reinsurance treaties, retrocession treaties and claims process must be considered

SUMMARY

- Uncertainty of reserve estimates in general insurance must be quantified where possible.
- A qualitative description of the uncertainty in the estimates should also be provided.
- The method of quantifying uncertainty is not specified and actuarial judgement may be the most appropriate approach in some circumstances.
- Guidance on quantifying uncertainty is provided in ASP GI-1(Ireland) and GN 12 (UK).
- ASP GI-3 provides guidance on the preparation of SAO for non-life reinsurance business.

6 Pensions

The years 2006 and 2007 continued to see significant developments in the Pensions Industry in Ireland.

Mandatory pension provision was considered in the Pensions Board Special Savings for Retirement report and a Government green paper on the issue is expected shortly which will set out the options for increasing pension coverage in Ireland

Despite the recent improvements in the funding position of Defined Benefit pension schemes, the closure of Defined Benefit pension schemes to new and/or existing members continued. The closure of the Bank or Irelands defined benefit pension scheme to new employees received considerable media coverage.

Membership of Defined Contribution pension schemes continued to grow while concern was again raised about the adequacy of typical contributions to DC schemes. However AIB's decision to replace its DC scheme with a hybrid scheme containing a DB and a DC element as a result of pressure from trade unions may indicate a new trend in Irish occupational pension schemes.

These and other topics are covered in this section as follows:

- Overview of the National Pensions Strategy
- Compliance Monitoring
- Legislation Update
- Update on Current DC Schemes
- Hybrid Scheme Developments

6.1 Overview of the National Pensions Strategy

The National Pensions Strategy was launched in 1998 with the aim of supplementing the state pension with a voluntary private pension and improving the flexibility of such private pensions to encourage a greater take up rate.

The main developments in the National Pensions Strategy over the last number of years were the National Pensions Review and the Special Savings for Retirement Reports prepared by the Pensions Board in 2005 and 2006 respectively.

These reports build on the National Pensions Policy Initiative (NPPI) report completed in 1998 and are important stepping stones towards the upcoming green paper on national pensions strategy.

The 1998 NPPI Report set three targets in relation to pension's coverage and adequacy. They are

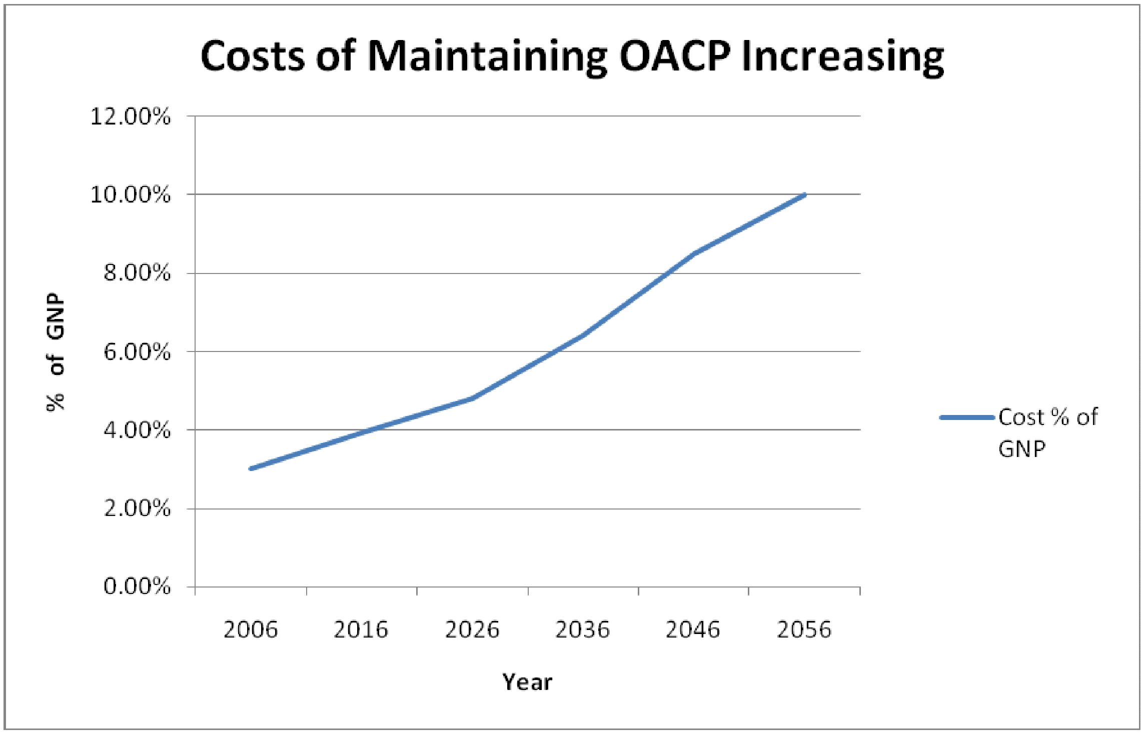
- the Old Age Contributory Pension (OACP) would be 34% of Gross Average Industrial Earnings(GAIE)
- A post retirement income replacement ratio of 50% of pre-retirement income before tax
- Supplementary pension coverage for 70% of the working population over age 30

The National Pensions Review completed in late 2005 reviewed progress towards achieving the NPPI targets. The main findings of the National Pensions Review are discussed below.

Target 1 - Old Age Contributory Pension 34% of Gross Average Industrial Earnings

The Old Age Contributory Pension now exceeds 34% of Gross Average Industrial Earnings (GAIE) so this first target has been already met. However, maintaining the Old Age Contributory Pension at this level in the future will be a significant challenge for the government, as highlighted in the 2005 National Pensions Review.

The annual gross cost to the exchequer of providing the OACP is expected to rise from 3% of GNP in 2006 to 10.1% of GNP in 2056 as illustrated in the graph below.



This is because the projected numbers of people over age 65 will triple in the period to 2056. In the same period the numbers at work will also increase but not by as much. Increasing life expectancy exacerbates this problem as pensions will have to be paid for longer in future.

The reduction in the ratio of workers to pensioners will also challenge the government to make choices as how we are to meet these higher pension costs.

The policy choices for the government to deal with these challenges are:

- Reduce the value of state pension benefits
- Increase the age at which state retirement benefits are taken
- Increase taxation or PRSI to meet increased costs
- Increase pre-funding of benefits through the National Pensions Reserve Fund

Targets 2 & 3 - Coverage and Adequacy

According to a CSO survey, supplementary pension coverage for the workforce over age 30 has increased from 54% in 1995 to 59% in 2004. This is still short of the NPPI target of supplementary coverage for 70% of the working population over age 30. Currently Ireland is faced with the prospect of almost half of the workforce (900,000) retiring with no provision to replace their income with anything other than state benefits. Even if the NPPI coverage target were achieved today there would still be a significant number of people with no supplementary pension coverage.

Statistics on adequacy are incomplete but it is thought that the replacement ratio is still well below 50% of pre-retirement income for most workers. The trend to defined contribution pension provision with relatively low contributions is expected to exacerbate this adequacy problem.

There is also a strong consensus that the NPPI coverage and adequacy targets will not be met without significant change to the current pensions system. Current pensions awareness activities and existing incentives are not achieving the level of retirement provision set out in the NPPI Report.

Future prospects for pension's coverage and adequacy

According to the Pensions Board the important trends affecting coverage and adequacy at the moment and in future are:

- Pensions Board surveys have shown that pensions awareness has increased considerably in recent years. However there is no evidence that this is translating into a rapid increase in coverage.
- Pensions are much more expensive than they used to be because of the effect of lower interest rates and increased life expectancy. There does not appear to be good public awareness of the cost of a reasonable retirement income.
- Membership of defined benefit schemes continues to increase slowly although it forms a declining percentage of total coverage. However, this increase is almost entirely due to increases in membership of existing schemes: the only new defined benefit schemes appear to be as a result of restructuring existing schemes or occasional single member arrangements. Despite the increase in membership the Board has concerns about the future for defined benefit provision in the private sector.
- Pension providers have frequently expressed the view that it is uneconomic to market pensions to the lower paid because of the costs of complying with regulation. These costs are a fixed amount per person and the effect is therefore to make small pension contracts unprofitable. Such a view is a considerable obstacle to increasing pension coverage among younger workers and the lower paid, who are the Board's priority for achieving the NPPI targets.

The policy choices for the government to increase adequacy of retirement provision and overall supplementary pension coverage are:

- Increasing incentives in voluntary supplementary pension provision
- Provision of an earnings related state pension in addition to the Old Age Contributory Pension
- Increasing the Old Age Contributory Pension to 50% of Gross Average Industrial Earnings
- Mandatory pension provision

Incentives to further increase voluntary supplementary pension provision could include any combination of the following:

- Give everybody tax relief on retirement contributions at the higher rate
- Match retirement contributions instead of marginal tax relief
- Allow once off earlier access to retirement funds to promote increased savings
- Greater flexibility for retirement fund at retirement age
- Incentivise the funding of retirement benefits over longer period of time
- Reduce regulation of PRSAs particularly at point of sale and on charges

Four particular mandatory policy options available to the government were explored in the 2006 Special Savings for Retirement Report. These were:

- Increasing the current state pension
- The creation of an additional mandatory supplementary pension
- Soft mandatory model (auto-enrolment)
- A hybrid model combining an increase in the state pension and an additional mandatory supplementary pension

On the 17th October 2007 the Government released a green paper on pensions setting out the current position on social welfare, occupational, personal and public service pensions. The paper will consider the issues raised in the 2006 Special Savings for Retirement Report on mandatory pension provision.

The paper can be downloaded at: www.pensionsgreenpaper.ie Submissions on the paper can be made via this website and will also be available to view in due course.

SUMMARY

- ❖ The cost of providing a state pension will continue to increase in the future due both to increasing life expectancy and the aging population resulting in a reduced ratio of workers to pensioners.
- ❖ Nationally both the proportion of the population with a pension and the adequacy of pension savings for those with a pension remains low.
- ❖ Mandatory pension provision was considered in the 2006 Special Savings for Retirement Report.

6.2 Compliance Monitoring

The Actuarial Standard of Practice Pen 10 - "Compliance monitoring reviews of the statutory work of scheme actuaries" is now in place and is effective from 1 April 2007.

This Actuarial Standard of Practice gives structure to the Compliance Monitoring system and brings with it a new level of accountability for scheme actuaries. Set out below is a summary of how the Compliance Monitoring System works.

6.2.1 Compliance Monitoring Process

Both the legislation and PEN 10 require Scheme Actuaries to appoint an independent actuary called a Reviewing Actuary to undertake a Review of their work of a statutory nature.

The Reviewing Actuary selects and reviews a sample of the work the Scheme Actuary has signed in the period under review.

If the Reviewing Actuary is happy that the sample of the Scheme Actuary's work that he/she has selected complies with the Pensions Act and the relevant actuarial standards of practice in all material respects then he/she will issue the Scheme Actuary with a Compliance Certificate.

To successfully renew their practising certificate on or after 1 November 2008 the Scheme Actuary's application must be accompanied by the Compliance Certificate in respect of the previous review period.

The first Review period has already started and runs from 1 April 2007 to 31 March 2008. Any statutory item of work signed within this period may become part of the sample of work that examined by the Reviewing actuary. The sample sizes that the Reviewing Actuary will take are 10% of all actuarial valuation reports, 10% of Actuarial Funding Certificates and 10% of funding proposals and 5% of Annual Statements signed within the review period in question.

6.2.2 The Pensions Board

It is worth bearing in mind that the Pensions Board can also ask a Scheme Actuary to have a particular piece of work reviewed. This eventuality is also covered by the standard of practice.

The nature, scope and conduct of the review are the same as any other review carried out in accordance with this Standard of Practice. So the process followed by the Reviewing Actuary in assessing whether the given piece of work is compliant in all material respects is unchanged.

However the output and the timescales involved are different. The output from the Pensions Board process is a Report prepared by the Reviewing Actuary and sent to the Pensions Board. The contents of the report are set out in some detail in the Standard of Practice.

This report must be sent to the Pensions Board within 3 months of the date of the request of the Pensions Board. The responsibility lies with the Scheme Actuary to have the

Report prepared and submitted to the Pensions Board by the Reviewing Actuary. This item will be counted towards the Scheme Actuary's Compliance Monitoring totals for the Review Period in question.

6.2.3 Implications of Non-Compliance

If the Reviewing Actuary finds the sample of the Scheme Actuary's work to be non-compliant he/she won't be in a position to issue the Scheme Actuary with a Compliance Certificate.

The practicing certificate regulations require that the Scheme Actuary's application to renew their practicing certificate is accompanied by a Certificate of Compliance in respect of the most recent review period. In most cases it is expected that the Practising Certificates Committee will grant a practising certificate for a 6 month period after which the Scheme Actuary will have to get their work reviewed once again.

It is also likely that the Reviewing Actuary will report an apparent breach of professional standards and refer the matter under the disciplinary scheme in line with the PCS.

The Scheme Actuary must provide the Trustees of the Pension Scheme with a replacement compliant piece of work. Finally the Scheme Actuary must also take appropriate steps to review work not included in the sample and take corrective action if necessary.

SUMMARY

- ❖ Requirement for an independent reviewing actuary to review statutory work of a scheme actuary.
- ❖ Reviewing actuary may be appointed both by the scheme actuary and the Pensions Board.
- ❖ Compliance certificate will be issued by reviewing actuary once he/she satisfied the scheme actuary's work is compliant.

6.3 Legislation Update

6.3.1 Disclosure Requirements

The occupational pension schemes (disclosure of information) regulations 2006 which were made law in May 2006 made several significant changes to the information which must be disclosed annual by employer sponsored pension schemes within the Republic of Ireland.

Trustees Annual Reports

For scheme years commencing on/after 23 September 2005 there is now a requirement to disclose a lot of additional information within the Trustees' Annual Report. The following items are the most significant:

- Details of any funding proposal
- Statement of Investment Policy Principles (not applicable to Small Schemes)
- Statement on internal dispute procedures
- Statement concerning financial, technical and other risks.
- Statement that Trustees have appropriate procedures for receipt of contributions within the statutory deadlines and in accordance with the scheme rules and the recommendation of the actuary.

Annual Benefit Statements

For scheme years commencing on/ after 1 January 2007 there is now a requirement to disclose additional information to members of pension schemes on their annual benefit statements. The following items being the most significant:

- Statement of benefits payable from normal pensionable age assuming the member has left service on a stated date and the method of calculation.
- Statement that the scheme takes account of the State pension (if this is the case).
- Statement that the State pension is payable in addition (subject to qualifying).
- Statement that the method of calculation of contributions is set out in the rules and in the explanatory booklet.

In the case of defined contribution schemes a list of the contributions credited during the scheme year in respect of the member.

Statement of Reasonable Projection

A further element of the regulations relates to the requirement for benefit statements in respect of either defined benefit scheme Additional Voluntary Contributions (AVCs), or in respect of defined contribution schemes to contain a Statement of Reasonable Projection. Implementation of this aspect of the regulations has been deferred until 2008. The legislation will require that such a Statement of Reasonable Projection is furnished automatically to members once in each scheme year and on request within two months of request. Discussion are ongoing between the Pensions Board and the Society of Actuaries on what the basis will be for this projection as it will need to be incorporated into the software and administration tools of life offices, consultancies etc..

6.3.2 Finance Act 2006

The 2006 Finance Act introduced several measures all aimed at restricting the eventual benefits which high net worth individuals can obtain from approved pension arrangements.

A special tax charge of 41% on the excess in value of a pension fund over €5million or, if higher, the value of the funds on 7 December 2005 (provided that a detailed notification was made to Revenue by 6 June 2006). The standard €5 million threshold has now been increased for inflation to €5,165,000

Tax free pension scheme lump sums were also capped at 25% of the above cap i.e. €1.25 million (now indexed to €1,291,250) with no transitional arrangements to deal with cases where the value of funds in a pension exceeded €5 million in December 2005.

The third change is that there is now an annual imputed distribution from the value of the assets held in Approved Retirement Funds (ARFs) by individuals over age 60 at December 31st each year. The imputed distributions are 1% of the value of the assets at 31 December 2007, 2% at 31 December 2008 and 3% in each subsequent year.

There have been many analysts and observers who are critical of these restrictions. The special tax charge at 41% on the excess of the value of an individual's pension fund over the above mentioned thresholds can result in an effective tax rate of over 65% ultimately applying to the excess when further tax (at 41%) is applied to the pension purchased with the remaining 59%.

Another somewhat negative aspect of the provisions was the lack of a transitional arrangement for the level of tax-free lump sums from pension schemes and the fact that the new ARF deemed distributions rules apply regardless of the value of assets in an ARF. Retention in an ARF is penalised, even where the assets in the ARF are falling in value and the holder wishes to defer withdrawing in order to preserve income for the future.

SUMMARY

- ❖ Significant new disclosure requirements for Trustees annual report and members annual benefit statements.
- ❖ Annual benefit statements must now contain a statement of reasonable projection for DB AVCs and DC schemes.
- ❖ Finance Act 2006 introduced significant changes to the taxation of pension scheme benefits.

6.4 Update on Current DC Schemes

According to the Pensions Board's most recent annual report, the total membership of defined contribution schemes at the end of 2006 was 255,000. Excluding public sector pension schemes just under half of all members covered by occupational pension schemes are members of defined contribution schemes.

It is expected the number of members in defined contribution schemes will grow significantly in the years to come as existing defined contribution schemes take in new entrants and from the creation of new defined contribution schemes which replace defined benefit schemes which have been wound up. The number of PRSA contracts (another form of defined contribution provision) also continues to increase each year.

Therefore in future a significant number of people will be relying on the defined contribution model to provide them with an adequate income in retirement.

The issues of increasing longevity, lower investment returns and investment risk affect defined contribution members just as much as the members of the defined benefit schemes. However, the effect of these issues will be borne solely by the individual defined contribution member and many of these members will not become aware of the effect on their retirement savings until close to their retirement.

It is clear from the National Pensions Review that the typical contribution to a defined contribution scheme or PRSA will not be enough to maintain the contributor's standard of living in retirement. It is also clear from the National Pensions Review that pensions awareness campaigns are not having a significant impact on increasing the adequacy of defined contribution provision.

Various solutions to this problem have been posed to date. Much of the focus has been on increasing awareness and pension's education. Certainly more work can be done in these areas. More recently the focus has turned to hybrid schemes as a possible solution to the defined contribution under funding problem.

The challenge of increasing the general level of defined contribution savings is one of the most important challenges facing the government and social partners today. This is expected to be one of the primary concerns that will be addressed by the upcoming Green Paper on Pensions. Indeed how this issue is addressed will have significant repercussions on this country at a social as well as an economic level.

SUMMARY

- Membership of Defined Contribution schemes continues to grow.
- Typical contributions to DC schemes will not be sufficient to maintain contributor's standard of living in retirement.
- Hybrid schemes may reduce the problem of under funding of DC schemes.

6.5 Hybrid Scheme Developments

6.5.1 Allied Irish Bank

An independent industrial Tribunal recently made recommendations regarding the established of a new hybrid' pension arrangements for AIB employees. The recommendations represent the final stages in a protracted AIB/Irish Bank Officials Association (IBOA) negotiation regarding pensions which has been on-going for a number of years. The IBOA is the main union for Irish Bank employees

Background
In 1996, AIB introduced a defined contribution (DC) pension scheme for all new employees after that date. The DC arrangement has always been a 'bone of contention' with the IBOA who had concerns about the ability of the Scheme to deliver adequate pension benefits. There were also concerns about poor investment performance, the degree of 'risk' borne by the members and also the low level of member participation. The DC scheme is non contributory with an 8% employer contribution.

Tribunal Recommendations
In accordance with the tribunal procedures a recommendation was put forward by the Tribunal. The recommended design was specifically introduced to address the following matters:

- The 'risk sharing' dimension
- The uncertainly of annuity purchase for lower paid staff

It also will result in improved pension benefits for all current DC scheme members.

The recommended design which was recently endorsed by the Board of AIB has yet to be implemented. The key aspects of the proposed design are:

Defined Benefit Component

- The DB component will apply in respect of earnings up to a cap of €61,997 p.a. This cap will increase in line with the salary of a specified AIB pay grade.
- The DB component is based on a 60ths accrual and is integrated with state benefits (i.e. pension benefits will be reduced on a pro rata basis to reflect member’s retirement benefits from the state).
- Membership will be compulsory with employee contributions of 5% of pensionable salary. Pensionable salary is defined as basic annual salary less the state pension deduction.
- The DB component will be a new section of the existing AIB DB scheme. Benefits for existing DB members will remain unaltered.
- Pension increases in payment based on the Consumer Price Index (CPI) (i.e. price inflation) will be funded for and provided on a discretionary basis.

- Initial normal retirement age of 65. This will however move in line with the State's retirement age

Defined Contribution Component

- The Bank's contribution rate will be 10% of salary above the cap.
- Mandatory employee contributions of 5% of salary above the cap will also be introduced.

Retrospection

The Bank will make a 'top up' payment in respect of existing DC member's who opt to enter the new 'hybrid' arrangement. The top up is a sum equivalent to 5% of the Bank's DC contributions to date in respect of each transferring member. The 'hybrid' benefits will only apply in respect of transferring members from their date of transition.

Implications of the Tribunal Recommendations

The recommendations represent the culmination of a prolonged period of negotiation between AIB and the IBOA on pension issues. It can be argued that it represents a significant victory for the trade union movement who have, over the last couple of years, argued strongly and with increasing sophistication and influence against the move away from defined benefit pension schemes. Union arguments tended to relate primarily to existing employees but they have extended the scope of their campaign to also include future new entrants.

From an employer perspective the main concern is that this recommendation has 'raised the bar' in terms of negotiated pension deals. A move back from DC to DB provision is in my experience an unprecedented move for a large Irish employer and is likely to be regarded as a 'watershed decision' by the unions who will clearly 'leverage' it as much as possible in future pension negotiations.

Appendix A - Recent Mortality Developments

This section will give an overview of the main work undertaken by the CMI in recent years including:

- the release of the "00" series tables
- the investigation into the mortality of self administered pension schemes
- the review of mortality projection methodologies

The section concludes with a brief update on Irish mortality issues and on developments in capital markets trading mortality and longevity risk.

"00" Series Tables

The "00" series tables based on experience between 1999 and 2002 were adopted by the Institute and Faculty in September 2006.

Compared with the "92" series tables the standard "00" series tables have been significantly extended to provide more detailed mortality experience for insured lives and pensioners.

Group	**Experience Graduated in "92"**	**Additional Experience Graduated in "00" tables**
Assured Lives and Temporary Assurances	Aggregate mortality rates	Smoker, Non Smoker rates
Life Office Pensioners	Normal Retirements	Early Retirements and Combined Retirements
Annuitants	Vested rates	Deferred and Combined rates
Personal Pension	NONE	Vested, Deferred and Combined rates

The naming convention for the tables has changed slightly to reflect the new tables released as part of the "00" series.

Analysis of the "00" series tables:

- For assured lives and temporary assurances the "accident hump" in the late teens to early twenties is no longer as obvious as in earlier series.
- Comparison of smoker and non smoker rates shows that the mortality of smokers is approximately twice that of non smokers.
- Comparison of the mortality rates of Annuitants and Personal Pension policy holders shows differences for pensions in payment and in deferment. Mortality rates are higher for personal pension policies in deferment but lighter when pensions are in payment.
- The CMI also carried out an investigation into the mortality of Assurances in the

Republic of Ireland as part of the "00" series investigation though no corresponding standard tables were generated. While the Irish exposed to risk has fallen due both to a decline in the number of offices contributing data and to the fact that most business written in Ireland is now unit-linked the CMI noted that the mortality of assurances on male lives was very similar to that of the UK.

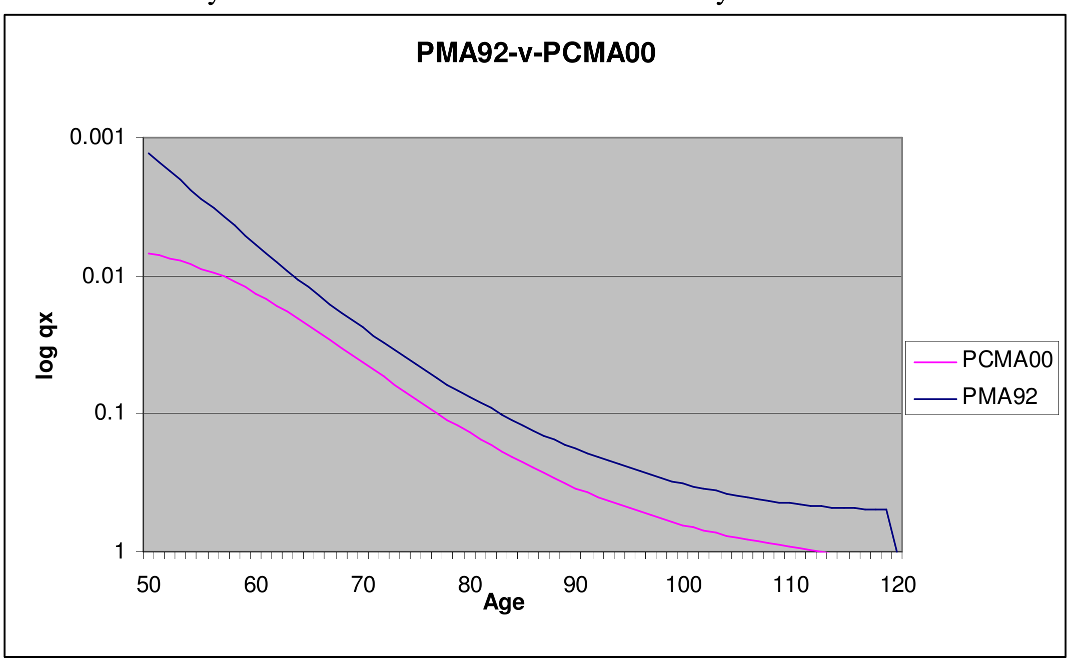
Unlike earlier series the CMI have not produced any projected tables for Pensioners and Annuitants. The CMI released a library of projections using the PSpline, Lee Carter and other projection methodologies (see Working Paper 27) in July 2007 but have not recommended any method in particular for use with the "00" series tables.

"00" Series -v- "92" Series

Assured Lives and Temporary Assurances:
Male mortality has continued to improve significantly across all age groups. Mortality for male assured lives and temporary assurances is about 80% of that expected under the 92 series tables.

Female mortality had improved but at slower rate than male mortality. Mortality for female assured lives is approximately 95% of the 92 rates and for temporary assurances the difference is 85% of the 92 rates

Annuitants and Pensioners
For immediate annuitants male and female mortality is around 90% of the corresponding "92" series base tables. The "92" series projections have however shown to be a reasonable good fit to actual experience. For life office pensioners mortality rates are 80% of the corresponding base "92" (PMA92) series tables. I have shown below the PMA92 mortality rates relative to the PCMA00 mortality rates.



Investigation into the Mortality of Self Administered Pension Schemes

In 2002 the CMI launched an investigation into the mortality experience of self administered pension schemes. Large actuarial consulting firms and the Government Actuary Department (GAD) in the UK were asked to supply data. The data received covered the period from 1996 to 2003 and there were significant problems in collecting the data. The CMI hopes to release a report on their investigations in September 2007.

Mortality Projection Methodologies

The CMI has included projections of future mortality improvements in its pensioner and annuitant tables for almost 50 fifty years. However in retrospect these projections have often underestimated actual mortality improvements.

In addition in recent years there has been a considerable amount of demographic and biological research on factors affecting ageing together with the development of new statistical techniques for forecasting trends.

As a result of these two factors the CMI decided to review its mortality projection methodologies in 2002.

Background

The “92” Series pensioner tables consisted of base tables reflecting the actual experience between 1991 and 1994 and projected tables which projected mortality rates to 2020. The projection method assumed an ultimate rate of future mortality and that mortality rates would decline exponentially to this ultimate rate.

Over time it was noticed that the actual rate of improvement of male pensioner mortality was significantly faster than that allowed for in the original “92” series projections (PMA92C2020). As a result in 2002 the CMI decided to release an updated set of mortality projections for the “92” series pensioner tables. These were “interim” projections to be used while the CMI undertook further work in this area.

These interim projections differed significantly from earlier projections for the following reasons:

- 2D Splines were used to model past mortality experience
- the projections included the “cohort” effect for the first time
- to reflect the uncertainty inherent in projecting future mortality 3 sets of projections were produced – the short, medium and long cohort projections.

The cohort effect refers to the fact that mortality improvements for each age have not been consistent but have varied according to year of birth. In particular in the UK the rates of improvement for those born in the years around 1926 have been significantly greater than for any other year of birth. The interim projections are based on mortality improvements for this cohort only which have been extended into future years.

The labels short, medium and long refer to the cohort period – i.e.: the length of time the existence of the cohort effect is modelled for. The short cohort projection models the cohort effect to 2010, the medium cohort to 2020 and the long cohort to 2040.

New Projection Methodologies

At the same time as the interim "92" series projections were been developed the CMI was reviewing 2 new projection methodologies for possible use with the "00" series tables – the P-Spline method and the Lee-Carter method.

2D Penalised Spline (P-Spline) Method:
This is a regression type method which fits 2D cubic splines to mortality rates by year and age and projects future mortality rates by extrapolating these splines into future years. While the P-Spline method allows the cohort effect to be projected into future years it is not, however, a stochastic projection.

The CMI published it assessment of the P-Spline method in Working Paper 20 (WP 20) in April 2006.

Lee-Carter Method:
The Lee-Carter method uses a time series model to project future mortality rates and hence is a stochastic approach. Given that actuaries are familiar with stochastic asset liability models driven by economic scenarios it was felt that the stochastic Lee-Carter method would be intuitively familiar to actuaries. The Lee-Carter method, however, does not explicitly allow for the cohort effect.

In 2006 Renshaw and Haberman proposed an extension to the Lee-Carter method which does allow for the cohort effect and is known as the Lee-Carter Age Period Cohort (APC) model.

The CMI published its assessment of Lee-Carter and the APC extension method in WP 25 in April 2007.

Comparison of the 2 methods:
The CMI concluded working paper 25 by comparing the results of fitting the P-Spline model (WP 20) and the Lee-Carter method (WP 25). They concluded that both the P-Spline and Lee-Carter method have particular features that make them suitable for certain purposes but that neither model meets all criteria desirable for projection models. The CMI, therefore, do not recommend any particular projection model for use with the "00" series tables.

Library of Mortality Projections

While the CMI has provided software to allow actuaries to apply the P-Spline and Lee Carter methods to their data this was aimed at those with a special interest in mortality projections and it was felt that a simpler approach was needed for those actuaries who were only interested in applying the results of the projections.

As a result in July 2007 the CMI published a draft library of mortality projections. The library currently consists of 42 tables of improvement factors which can, in theory, be applied to any base table of annuitant or pensioner mortality.

The mortality projection methods used to produce the tables of improvement factors in the Library include:

- existing methods e.g.: those used to produce the original 92 Series projections and the interim cohort projections.
- the new P-Spline and Lee Carter methods.

Working paper 27 describes the projection methods used to produce each of the tables in the Library.

Useful Mortality Papers

Working Paper 1:	Describes the application of the P-Spline method to develop interim projections for the "92" series tables – the short, medium and long cohort projections.
Working Paper 15:	Overview of P-Spline and Lee-Carter methods.
Working Paper 20:	Analysis and results of the P-Spline projection methodology applied to UK assured lives and ONS data.
Working Paper 21+22:	Graduation of the "00" series tables
CMI Report 21:	Final report on the graduation of the "00" series tables.
Working Paper 25:	Analysis and results of the Lee-Carter projection methodology applied to UK assured lives and ONS data. It also contains a comparison of the P-Spline and Lee-Carter methods.
Working paper 27:	Library of results of P-Spline and Lee-Carter projections

Longevity in the 21st Century – author: Richard Willets.

Irish Mortality Developments

The demographic sub committee of the mortality working group presented a report on "Mortality Trends in Ireland" to the Society on 13th June 2007. This report looked at:

- mortality trends in the Irish male population;
- current CSO mortality projection methods;
- the UK GAD targeting method for mortality projections applied to Irish data;
- mortality by cause of death and social class in Ireland.

The CSO adopted and will shortly publish population mortality forecasts based on a new method of projection developed by Shane Whelan, FSAI. This method uses a targeting approach which starts with current levels of mortality improvements, which are running at 5% pa for males and 3.5% pa for females across most ages from 0 to 90, and assumes these levels reduce to an ultimate steady state level of mortality improvements over a 25 year period. Naturally it is difficult to settle on the ultimate steady state, and improvements in the range of 1% to 2% can be justified on the basis of 20th century improvements. Accordingly, the projection assumes a 1.5% pa reduction at each age in the range 0 to 90 in 25 years' time. For ages of 100 and over, no mortality improvements are assumed for either sex. The mortality improvements from age 91 to 99 are linearly interpolated from those at age 90 and 100 in each future calendar year.

Adopting such an approach to forecasting male life expectancy for those born in 2006 and those aged 65 in 2006 are illustrated in the following table, including a brief sensitivity analysis to the ultimate steady state rate of improvement:

	Cohort Aged 0 in 2006	Cohort Aged 65 in 2006
Steady State Rate of 1.5%	91.03	20.55
Steady State Rate +0.5%	93.04	20.81
Steady State Rate -0.5%	88.61	20.30

These figures should be compared against life tables currently used by Irish actuaries.

Developments in the Market for Mortality and Longevity Risk

The liabilities of assurance companies and pension schemes have always been exposed to mortality and longevity risk. However in recent years the impact of this risk has become more significant due to:

- the significant and unexpected mortality improvements that occurred in the past decades and the lack of consensus on the correct approach to projecting future mortality rates has highlighted the uncertainties and risks in estimating future mortality and hence liability values.
- changes in accounting standards and regulation that have focused attention on mortality/longevity risk e.g.: the disclosure of pension scheme liabilities in company accounts has impacted on the share price of companies and on possible mergers and acquisitions.

In addition reinsurers, who would in the past have underwritten significant amounts of mortality and longevity risk, are in many cases seeking to reduce or limit their own exposure in this area.

As a result assurance companies and pension schemes need new ways to manage their mortality and longevity risk. This has led in recent years to the development of capital markets in mortality and longevity risk.

The main mortality linked securities include:

Longevity Bonds (or Survivor Bonds) – the payments at each coupon date are related to the proportion of a reference population that is still surviving at that date.

Mortality Bonds (or Catastrophe Bonds) – the issuer will make payments under the bond as long as mortality experience is in line with that expected when the bond was issued. In the event of an extreme mortality event e.g.: pandemic or natural disaster then the issuer will cease to make payments - in other words the bond reduces the issuer's exposure to extreme mortality events.

Survivor Swaps – payments under the fixed leg of the swap are based on expected future mortality experience of a reference population while payments under the floating leg are based on actual experience of the population. The reference population could be standard population such as the population of a country or a specified target population such as the membership of a pension scheme.

Significant Market Issues

- Swiss Re launched the first of its mortality bonds in 2003 and a second in 2005.
- A 25 year longevity bond was issued by European Investment Bank and BNP Paribas in November 2004.

While we will undoubtedly continue to see further developments in mortality and longevity markets there are a number of issues which will need to be addressed:

- counterparties to survivor swaps – while assurance companies and pensions are willing to sell mortality risk we also need buyers of this risk.
- investor knowledge – there is a lack of understanding, particularly among DB pension trustees, of the benefits of survivor swaps in hedging longevity risk.

Appendix B – References

In preparing the "Current Topics, 2007" paper for the Society of Actuaries in Ireland a wide range of sources were consulted which we have listed below. We would like to express our thanks to the individuals and organisations listed for the information they have provided.

If, however, any source has not been credited or credited incorrectly we would be grateful if you would inform the Society of Actuaries in Ireland so we may update the references section where appropriate.

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CMI Report 21: The mortality experience of the 1999-2002 quadrennium.

Working Paper 1: An Interim basis for adjusting the “92” Series mortality projections for cohort effects.

Working Papers 3 and 15:	Projecting Future Mortality.
Working Paper 20:	Stochastic projection methodologies: Further progress and P-Spline model features, example results and implications.
Working Paper 25:	Stochastic projection methodologies: Lee Carter model features, example results and implications.
Working Paper 27:	The "library" of Mortality Projections.