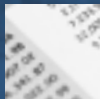
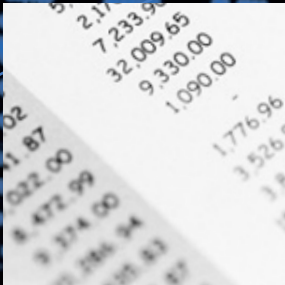




# The Actuarial Profession

making financial sense of the future

## Annual Research Report 2004





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## Presidents' Foreword

### Annual Research Report - 2004

Welcome to the 2004 Annual Research Report. The report lists all the research that working parties of the profession have been involved with throughout 2004.

The Actuarial Profession regards research as one of the cornerstones of its development; without an active and effective research programme the profession cannot develop and move forward. The importance of research to the profession is recognised within the Corporate Plan where it is one of the main headings in the Innovate section.

The Profession is very pleased that its collaboration with the Engineering & Physical Sciences Research Council has continued this year with a fourth round of grants having been awarded in December. This was the final round of grants from EPSRC. However, the profession is continuing to collaborate with EPSRC in the establishment of the Financial Risk Centre, which should be established in 2005.

The Morris Review concluded that the Profession needed to place greater emphasis and resources on university based research rather than firm-sponsored research, stating that universities were more likely to conduct independent actuarial research as they were free from the pressures of the commercial environment which most of us work in. The Profession is hoping to improve this area by persuading practitioners and university researchers to collaborate on projects.

Finally, whilst acknowledging that the number of members already involved in Research is quite astounding considering the size of our profession we would encourage any member interested in research, whether academic or commercial, to contact Pauline Simpson, the Secretary of the Research Steering Committee, whose details can be found at the back of this Report.

**Harvie Brown**

*President – Faculty of Actuaries*

**Michael Pomery**

*President – Institute of Actuaries*





## Executive Summary

This document summarises the research work undertaken in The Actuarial Profession during 2004. A high importance is placed on Research as is demonstrated both through the activities of volunteers in working parties and through the grants awarded to outside researchers such as universities.

The Actuarial Profession is also pleased to be collaborating with the Engineering and Physical Sciences Research Council in the quantitative finance network.

The reports on research in this report are organised by Practice Area.



## 1

## List of all research groups and working parties active in 2004

Further details of the objectives and membership of these working parties can be found from Page 13 onwards.

### Faculty Research Groups

Contact: David Hare (tel: 0131 245 0632, email: david\_hare@standardlife.com)

#### On-going Working Parties

- Bonus and Valuation Research Group
- Health and Care Research Group
- Mortality Statistics Research Group
- Pensions Research Group

### Finance and Investment Board Working Parties

Contact: Mark Symons (tel: 020 7632 2133 email: mark.symons@actuaries.org.uk)

#### Completed Working Parties

- Credit risk
- Critique of behavioural finance
- Demand for DC products
- Demand for investment classes
- Dynamic hedging strategy of cash guarantees using portfolio insurance
- Education
- Fixed interest investment
- Pricing and modelling business (not just financial institutions)

#### Planned Working Parties

The following working parties were set up in 2004 to report to the 2005 Finance and Investment Conference, further details will be on the website under Areas of Practice, Finance and Investment:

- Copulas and Investment Risk
- Derivative Prices & Market Behaviour
- Hedge Funds
- To Hedge or Not?
- How Do Consumers Evaluate Risk Financial Products
- Intergenerational Transfers Within Funded Defined Scheme
- Labour Economics
- Modelling (Stochastic volatility models)

- Pension Funds in Individual Capital Assessments
- Pricing
- UK Defined Benefit Pensions: Liability Driven Benchmarks

### General Insurance Board Working Parties

Contact: Catherine Barton (tel: 01372 824012, email: cabarton@bw-deloitte.com) and Peter Stirling (tel: 020 7632 2177, email: peter.stirling@actuaries.org.uk)

#### Completed Working Parties

- Asbestos
- Cycle survival kit II
- International Accounting Standards Board
- Professional Issues
- Statutory Actuarial Involvement in Non-life Reserving
- Stress Testing and Scenario Analysis

#### Planned Working Parties

- The Application of Strategic Theories to non life Insurance Markets
- Aviation Pricing
- Capital Allocation
- Claims Inflation Working Party
- Duty of Care for General Insurance
- Effect of the Courts Act
- Estimation of Uncertainty in reserves (GRIT)
- Fair Value Accounting
- GRIT Working Party
- ICA
- Information and Risk (from Black Holes to Black-Scholes)
- Math. Toolkit for Actuaries
- Predictive Dependencies
- Reinsurance Pricing
- RMS Offshore Gulf of Mexico cat modelling for practitioners
- So you're a qualified actuary but are you qualified to manage?



## Life Board Working Parties

Contact: Audrey Cosens (tel: 020 7632 2118,  
email: [audrey.cosens@actuaries.org.uk](mailto:audrey.cosens@actuaries.org.uk))

### On-going Working Parties

- Embedded Values
- Investment Strategy for With-profits and Non-profit Long-term Business
- Life Office Taxation
- Management of Closed Funds
- Operational Risk in Life Assurance
- Product Reviews
- Risk Management in the Financial Services Industry in Relation to regulatory changes on capital adequacy
- Risk Management Practices in Life Assurance
- Understanding the Implications of PSB Capital Categories to Life Companies
- Underwriting
- Use of Derivatives in Life Assurance

### Discontinued Working Parties

- Comparisons of With-Profits Business in Other Countries
- Protected Investment Products

## Pensions Board Working Parties

Contact: Margaret Marchetti (tel: 020 7632 2184,  
email: [margaret.marchetti@actuaries.org.uk](mailto:margaret.marchetti@actuaries.org.uk))

### Completed Working Parties

- The Management of the Discontinuance of Large Defined Benefit Schemes

### On-going Working Parties

- Mortality Investigations
- Risk Benefits
- Valuation Rates of Interest

## Social Policy Board Working Parties

Contact: Martin Hewitt (tel: 020 7632 2185,  
email: [martin.hewitt@actuaries.org.uk](mailto:martin.hewitt@actuaries.org.uk))

### Completed Working Parties

- Consumer Understanding of Risk
- Equity Release Working Party
- Family Policy Research Group
- Public Expectation of Pension Provision

### On-going Working Parties

- Actuaries' Panel on Medical Advances
- Damages Working Party
- Environmental Research Group
- Genetics and Insurance – Issues for Social Policy

## Health and Care Committee

Contact Martin Hewitt (tel: 020 7632 2185,  
email: [martin.hewitt@actuaries.org.uk](mailto:martin.hewitt@actuaries.org.uk))

### Completed Working Parties

- Long-Term Care

### On-going Working Parties

- Chronic Diseases
- Critical Illness Trends
- Healthcare insurance – treating customers fairly (TCF)
- UK Vaccination Programme – Risk and Reward

### Planned Working Parties

- Income Protection – isolating occupational, regional and socio-economic influences



## 2 The organisation of uk actuarial research

This section describes how research is currently organised within the UK actuarial profession. In addition to the research described below, the Continuous Mortality Investigation Bureau conducts and publishes research in respect of its work on the preparation of standard mortality and morbidity tables. Further information about any aspect of actuarial research can be obtained from the Secretary to the Research Steering Committee, at Napier House.

### 2.1 Research Strategy

The UK Actuarial Profession is committed to research to improve understanding of topics of relevance both to actuaries and the public. Since 1848 when the Institute was founded there has been a commitment to research into actuarial science in the public interest.

Research papers are used to inform and shape the programme of the annual actuarial conferences in each practice area. In some areas such as General Insurance, Finance and Investment and Health and Care the working parties set up at one conference report at the conference the following year. In other areas the link is not so direct. Research results thus help develop the continuing professional development (CPD) programme for each individual actuary. In time many of the ideas discussed at CPD events become part of the training syllabus for actuaries.

Increasingly actuaries are looking at work-related disciplines to confirm their own research work. The links with the EPSRC into the wider area of quantitative finance are thus important to the researchers within actuarial thinking.

Research is thus seen as an essential part of training and development within the profession.

### 2.2 The Research Committees

#### 2.2.1 Research Steering Committee

The Research Steering Committee co-ordinates research activity on behalf of the Faculty and Institute, reporting through the ECPD Board. Key roles of the Research Steering Committee are:

- to encourage and commission further research with an emphasis on research of a practical nature that is expected to be of value to a significant proportion of the profession;
- to provide practical support for researchers, including advice on publication;

- to assist researchers and others by ensuring an adequate exchange of information between those involved in research activities and/or those interested in the results of such research;
- to co-ordinate research and to try to avoid duplication of effort and to highlight gaps;
- to ensure that the resources available for research are used effectively;
- to liaise with overseas actuarial societies, professional bodies, research funding organisations and others on research matters;
- to administer and monitor funding through the profession's annual research grants awards programme and the Memorial Education and Research Fund.

#### 2.2.2 The Faculty Research Committee

The Faculty Research Committee reports to the ECPD Board and the Faculty Council and oversees the operation of the Faculty Research Groups. The Committee sets the Terms of Reference for these Groups and monitors their progress. Each Group aims to produce work which can eventually be reproduced for discussion at a Faculty Sessional Meeting, Student Society Meeting or other such forum. Participation in these Groups is a useful means of continuing the education of members especially younger Fellows.

The Committee is currently undertaking a comprehensive review of the Groups and the Faculty research programme.

### 2.3 Practice Boards

Identifying potential areas of research and instigating research activity is primarily the responsibility of the Practice Boards. Currently those responsible for research by subject area are:

- Finance and Investment Board;
- General Insurance Research Organising Committee (GIRO);
- Life Research Committee;
- Pensions Technical Support and Research Committee;
- Social Policy Board.



### Voluntary Support

Research working parties established by the Practice Boards have historically relied on the voluntary efforts of individual members of the profession. In some cases this means that there is considerable support from the member's firm whereas in other cases the work is carried out in the member's own time. In either case, the role of volunteers is vital to both the organisation of research and in its undertaking.

## 2.4 Research Staff

Staff support for the profession's research activities is provided by the Learned Society team within the ECPD Division and through the Board secretaries. During the last eight years more staff time has been allocated to research in recognition of its growing importance for the profession.

The role of the Secretary to the Research Steering Committee is to assist the Committee in the formulation of an effective policy for the promotion, co-ordination and promulgation of research and to help to ensure that the policy is put into practice. In addition the Secretary oversees the annual research grants programme, the maintenance of the on-line research database and the production of an annual research report. This work is supported by a half-time administrator.

Secretaries to the Practice Boards' Research Committees assist these committees to implement their research programmes and also work with the Secretary to the Research Steering Committee to co-ordinate research activities. Contact details are included in the relevant sections of this report.

Some of the time of the Staff Actuaries is also allocated to the co-ordination of research activities. Staff members do not undertake research in this role.

This structure has been devised to provide links with the range of activities carried out, both within the Practice Boards and across the profession through the ECPD Board.

## 2.5 Research Funding

Funding for research within the UK actuarial profession is currently provided through the annual research grants programme and the Memorial Education and Research Fund (MERF). In addition to this funding the profession has, since 2002, been collaborating with the Engineering and Physical Sciences Research Council (EPSRC) on grants under their programme for financial mathematics.

The Memorial Education and Research Fund, which is an amalgamation of various endowments and other grants, has a capital value of around £110,000. Details of awards made from the Memorial Educational and Research Fund since 1998 are given in Section 3.

Since 1996 the Education and CPD Board, with the agreement of FIMC, has allocated part of its annual budget to the funding of actuarial research. The responsibility for recommending applications for funding of projects to the ECPD Board lies with the Research Steering Committee, which administers the grants programme on behalf of both the Faculty and Institute of Actuaries.

The principal criteria applied by the Research Steering Committee in awarding grants from the above two sources of funding are:

- the research is of practical relevance and likely to be of value to a significant proportion of the profession;
- the proposal provides value for money;
- the research results in a paper or other deliverable that will be promulgated widely.

It is the aim of the Research Steering Committee to encourage Practice Boards to sponsor applications for funds in order to ensure that a proportion of research is driven directly by the needs of practising actuaries. The Committee is keen to encourage research in the application of existing actuarial techniques to new areas as well as the development of new ideas in mainstream actuarial work.

Funds totalling approximately £464,500 have been awarded since 1996, enabling the profession to support 51 small short-term projects of actuarial relevance. Details of the projects supported are set out in Section 3. The vast majority of the funding has been directed at universities and those engaged primarily in more theoretical work. In its policy for awarding research grants the Research Steering Committee aims to encourage an effective bridge between the development of theoretical techniques and their application to solve practical problems.

£120,000 (inclusive of VAT) is available for awards during the 2005/2006 Session although some of the funding has already been committed to the collaboration with the EPSRC.

Further information can be obtained from the Secretary to the Research Steering Committee, at Napier House.



## 3 Research grants

### 3.1 Research Grants Awarded In 2004

2004		
Project Title	Applicant(s)	Award (£)
Investment Decision-making in Defined Contribution Pension Plans	A Byrne	4,500
Analysis of the Costs of Medical Interventions in Alzheimer's Disease as They Effect Long-Term Care and Other Insurances	G Colgan, A Macdonald, D Pritchard	5,000
An Investigative Study on Current Practice of Estimating Work Time Lost to Non-Participation (for Contingencies Other Than Mortality)	R Verrall, S Haberman	10,000
Investigation of the Influence of Socio-economic status on Morbidity Status for Dread and Chronic Diseases	L Mayhew, R Verrall	14,000
Modelling and Forecasting of Mortality Rates II	I Currie	2,500
Healthy Life Expectancy Measurement in Scotland: An International Comparison	A Macdonald	15,000

### EPSRC Joint funded grants 2001-2004

1st Round 2001		
Project Title	Applicant(s)	Award (£)
A statistical approach to default correlation	Professor M Davis	161,112
Distributed Risk Management	Dr S D Jacka	156,641
Customer value management and customer lifetime value	Prof SH Thomas	82,274

2nd Round 2002		
Project Title	Applicant(s)	Award (£)
Mathematical Theory of Real Options	Professor LP Hughston	206,261
Optimal Premium Pricing of Non-Life Insurance	Professor S Haberman	133,928

3rd Round 2003		
Project Title	Applicant(s)	Award (£)
Price Dynamics and Risk Management in Financial Markets with Uncertainty and External Constraints	Dr J D Danielsson	179,000
Modern Statistical Approaches to Increment/Decrement Models	Dr C C Holmes	141,000
Pricing Risk In Mixed Insurance and Investment Portfolios	Dr A S McLeod	50,958
Pricing and Hedging with the Potential approach	Professor L C G Rogers	120,000
Modelling the Demographic and Financial Effects of Medical Advances	Professor H R Waters	135,000



#### 4th Round 2004

Project Title	Applicant(s)	Award (£)
Paying for Long Term Care	B Rickayzen	136,020
Integrating Historical Data and Market Expectations in Risk Assessment for Financial Institutions	Professor Ron Anderson	196,769

#### Memorial Education and Research Fund (MERF)

2003-2004 - £500 was used to award a prize at GIRO from the Brian Hey part of the fund.

2004-2005 - £2,259.00 was used to support a Zimbabwean lecturer attending the Actuarial Teachers and Research Conference, the FIB prize and the Brian Hey Prize.

## 3.2 Previous Grants Awarded Between 1996 and 2003

The following tables summarise the projects which have received funding from the Faculty and Institute since the establishment of the research grants programme in 1996.

#### 2003

Project Title	Applicant(s)	Award (£)
Consumer Understanding of Risk Research Project – second phase	N Chater	15,000
Modelling and Forecasting of Mortality Rates	I Currie	2,500
New Roles and relationships Between Actuaries and Auditors in UK Insurance Supervision	I Dewing	3,500
Research bid for an international comparative study of mortality tables proposed by the Pensions Board of the Actuarial Profession	S Haberman	7,500
An Analysis of Mortality Perceptions and the Factors that Influence them	C O'Brien	15,000
The Optimum Age for Purchasing Long Term Care Insurance	B Rickayzen	15,000
Pensions and Retirement Saving Research Consortium	J Banks	10,000

#### 2002

Project Title	Applicant(s)	Award (£)
Coherent Risk Measures: Context and Applications	E Desli	9,400
Evaluating the Financing of Long Term Care Systems in Other Countries and Applying the Lessons to the UK Market for Long Term Care	L Mayhew	13,000
Ex-post Analysis of Reserving Decisions in U.K. General Insurance Businesses	C O'Brien	6,880
The Estimation of Risks of Investment of Company's Pension Fund in it's Own Securities	S Spivak	10,200
Consumer Risk	N Chater	20,000
Actuarial Curve Fitting	R Verrall	12,650



## 2001

Project Title	Applicant(s)	Award (£)
Appraisal of the Methodology and Accuracy of Commercial Property Indices	P M Booth	11,500
Risk Equalisation in Irish Private Health Insurance	G Colgan	5,000
New Approaches to Annuitisation: Optimal Asset Allocation Strategies in Defined Contribution Pensions Post-retirement and Comparisons with Investment-linked Annuities	S Haberman	7,500
Incorporating Risk in the Analysis of PFI/PPP Projects	W Rodney	12,500
Compilation of a Database of UK Gilt Prices	A D Wilkie	4,350

## 2000

Project Title	Applicant(s)	Award (£)
Bayesian Networks for Classification in Insurance	R Cowell	11,000
Modelling Risk by Postcode Area in General Insurance: further research including the consideration of extreme events	M J Dixon, R Verrall	11,500
Penalised goodness of fit functions for inference	D Hand, V Vinciotti	6,500
Stochastic pension valuations and the assessment of the funding risk	S Haberman	7,440
Interest rate modelling using genetic programming	G Kennedy	10,000
Asset-liability matching in complete and incomplete market situations	R K Parchure	5,000
Reserving for Guaranteed Annuity Options: A Stochastic Simulation Approach	S Yang, H Waters, D Wilkie	8,180
General Insurance Working Parties	General Insurance Board	1,000

## 1999

Project Title	Applicant(s)	Award (£)
Regulation of Pension Provision in the European Union	D Cooper	11,400
Rating by Postcode Area in General Insurance	M J Dixon, R Verrall	11,400
An Assessment of the Suitability of the MFR using Deterministic and Stochastic Scenario Testing Techniques	I D Wright, S Haberman, Z Khorasaneh	11,400
Financial Companies in the Stock Market, 1825-1962: A Quantitative Study	C Green, P Maggioni	4,000
An Integrated Approach to Aspects of the Wilkie Model	A D Wilkie, M Omram, A S Macdonald	10,000
Charting the Frontier Between Actuarial Science and Mathematical Finance	S Jacka, J E Kennedy, H P Wynn	9,202
General Insurance Working Parties	General Insurance Board	2,000



## 1998

Project Title	Applicant(s)	Award (£)
Frailty Models and the Age and Time Dynamics of Mortality	S Haberman	9,000
An Investigation of the Solvency Risks of Insurers with Health Insurance Liabilities Specifically PHI using a Stochastic Simulation Approach	R G Chadburn, B Rickayzen, S Haberman	9,000
Development of Market Valuation Techniques for Pension Funds	A J Cairns	9,000
Actuarial Applications of Econometric Tools	S F Whelan	4,000
General Insurance Working Parties	General Insurance Board	1,000

## 1997

Project Title	Applicant(s)	Award (£)
Underwriting and Alzheimer's Disease	A S Macdonald, H R Waters	10,000
Designing a Practical Model to Examine Long-Term Costs in Great Britain	B Rickayzen, S Haberman, P M Booth	8,000
Applying Actuarial Techniques to the Valuation of Implicit Options in Freehold Property	P M Booth, R Gerrard	8,500
Testing the Sensitivity of Model Life office simulation results to variations in asset model structure	R G Chadburn, P P Huber	7,000
Improvements in Mortality at Higher Ages: Prospects and Financial Implications	R G Thomas, J Presnell, N G Rhodes	5,000
To Investigate the Analysis of Claims on an Individual Claim Basis, Using Bayesian Methods	R Verrall	5,500
The Construction of International Bond Yield Indices	A J G Cairns	6,000

## 1996

Project Title	Applicant(s)	Award (£)
Investment Strategy for Defined Contribution Pension Schemes	Z Khorasane	10,000
Optimal Funding of Defined Benefit Pension Schemes	S Haberman	10,000
Non-linear Time Series Models for Actuarial Use	R G Thomas, H Tong	7,480
Statistical Analysis of Individual Offices' PHI data and Some Financial Consequences of these Analyses	H R Waters, A A Korabinski, I D Currie	7,000
Analysis of Credit and Default Risk on Bank Lending and Mortgages	P M Booth, R Verrall, I Allan	7,000
Investigation of Models for the Term Structure of Interest Rates	A J G Cairns	6,000
Reducing the Resilience Reserve of a Life Office	G Kennedy, M Kerr	3,000



### 3.3 Abstracts from two of the Projects that received Grants from the Profession during 2004

#### Analysis of Mortality Perceptions and the Factors that influence them

*Chris O'Brien – Director, Centre for Risk and Insurance studies, Nottingham University Business School*

*Stephen Diacon – Professor of Insurance Management, Nottingham University Business School*

*Paul Fenn – Professor of Insurance Studies, Nottingham University Business School*

#### Scope of Project

The project begins with a review of the relevant literature, largely but not wholly US. Then, based on a survey of around 4000 individuals, the aim is to assess whether individuals' perceptions of life expectancy are close to "official" estimates; whether people take relevant risk factors into account; and what relationship there is between mortality perceptions and life insurance/pension purchases.

The researchers will estimate "actual" population from GAD estimates, distinguishing between estimates on current and forecast mortality rates. The researchers will carry out econometric analyses of the responses.

#### Key Results

The conclusions are:

- On average, people under-estimate population longevity;
- They ignore expected mortality improvements;
- Males are more optimistic than females;
- People take into account the impact of health, smoking, alcohol and parental longevity on their own lifespan;
- But this is not always accurate (e.g. smoking: the difference between smokers' and non-smokers' perceptions is much smaller than actuarial and medical evidence suggests);
- Reference groups appear to be influential (e.g. people in poor health not only give low answers for their own life expectancy, relative to GAD estimates, but also for people of their own age and sex in comparison with GAD estimates);
- People who are optimistic about population longevity are more likely to buy pensions and term insurance.

#### Investigative Study on Current Practice of Estimating Work Time Lost to Non-Participation

*Richard Verrall – Cass Business School, City University*

*Steven Haberman – City University*

#### Scope of Project

- To investigate the historic and current methodologies for estimating the effect of contingencies other than mortality which affect the value of the court awards in the case of future loss of earnings compensations;
- To evaluate the feasibility of dynamic modelling of labour force participation rates towards the estimation of worklife expectancy based on latest improvements in labour force data in England and Wales;
- To evaluate the suitability of the reduction factors for labour market risks contained in the Ogden Tables in the view of the findings regarding methodologies and data.

#### Key Results

- Detailed overview of the multiplier-multiplicand system and the role of the Ogden Tables in calculating the damages award in the courts in England and Wales. The reduction factors contained in the Ogden Tables for labour market risks might be out of date.
- Critical review of the methodology proposed by Haberman and Bloomfield (1990), which forms the bases of the recommendations contained in the Ogden Tables, to estimate the reduction factors for the labour market risks.
- Critical review of the methodology of dynamic modelling of the future loss of earnings put forward by Lewis et al. (2002) as a contemporary alternative to the traditional system, represented by the Ogden Tables multipliers.
- While there is an extensive volume of literature in the UK concerning the determinants of labour force dynamics, it seems that there is a relative lack of interest, in comparison to the US, for modelling the future loss of earnings (or worklife expectancy). The UK literature seems to be focussing more on socio-economic implications and usually investigating the labour market contingencies in isolation that could not be easily extended to dynamic modelling of worklife expectancy. Nevertheless, we reviewed the modelling frameworks and results of the key contingencies, such as unemployment, sickness and early retirement (we could not find any contemporary studies about the time lost to industrial disputes).
- Judged from research carried out in North America (USA and Canada), the consequences of dynamic modelling of the labour force is that the worklife expectancy estimates, and thus the compensation for future loss of earnings, would be potentially lower unless other aspects, like inflation and individual productivity growth, would be allowed for in the calculations.



## 4 Faculty research groups

There are several standing research groups within the Faculty Research Committee listed below, these are currently being reviewed. If you are interested in participating in one of these research groups, or have another topic to suggest, please contact the Chairman of the Faculty Research Committee;

David Hare (tel: 0131 245 0632), e-mail: [david\\_hare@standardlife.com](mailto:david_hare@standardlife.com))

**Bonus and Valuation Research Group**

**Health and Care Research Group**

**Mortality Statistics Research Group**

**Pensions Research Group**

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## 5 Finance and investment board working parties

If you are interested in participating in one of the on-going working parties, or have another topic to suggest, please contact the Secretary to the Finance and Investment Board –  
**Mark Symons** (tel: 020 7632 2133, e-mail: [mark.symons@actuaries.org.uk](mailto:mark.symons@actuaries.org.uk)).

### Credit Risk - Completed 2004

#### Objectives

Terms of reference: To prepare a paper incorporating research in the following areas: bubbles, through the cycle, ratings agencies, correlations, variations in spread, both cyclical and other.

#### Expected outcome

Paper and presentation at the 2004 Finance & Investment Conference

#### Progress to date

Paper presented to 2004 Finance & Investment Conference

#### Paper can be found at

<http://www.actuaries.org.uk/link/proceedings/fib2004/index.html>

#### Membership

*Chairman: Sweeting, Paul*  
*Other members: Christiansen, Collette; Dyer, David; Findlater, Alec; Harbord, Paul; Joubert, Phillip; Markou, Emilios; Maske, Manfred; Murray, Colin; Ng, Hui In; Procter, Kerrigan; Tay, Annie*

### Critique of behavioural finance – Completed 2004

#### Objectives

Terms of reference: To produce a paper incorporating a critique of behavioural finance

#### Expected outcome

Paper and presentation at the 2004 Finance & Investment Conference

#### Progress to date

Paper presented to 2004 Finance & Investment Conference

#### Paper can be found at

<http://www.actuaries.org.uk/link/proceedings/fib2004/index.html>

### Membership

*Chairman: Sykes, Ian*  
*Other members: Ciampa, Emanuele; Joubert, Phillip; Murray, Colin; Murrell, Adrian; O'Sullivan, Nigel; Pan, Wei-Cheong; Pearse, Simon*

### Demand for DC products – Completed 2004

#### Objectives

Terms of reference: To produce a paper through research into how DC will evolve with the Government initiative to simplify saving and pension provision

#### Expected outcome

Paper and presentation for the 2004 Finance & Investment Conference

#### Progress to date

Paper presented to 2004 Finance & Investment Conference

#### Paper can be found at

<http://www.actuaries.org.uk/link/proceedings/fib2004/index.html>

#### Membership

*Chairman: Garcia, Philip*  
*Other members: Bridges, Stephen; Hargreaves, David; Hewitt, Tony; Howie, Robert; Ng, Hui In; Popat, Hemal; Slattery, Valerie*

### Demand for investment classes – Completed 2004

#### Objectives

Terms of reference: To produce a paper incorporating research in some or all of the following areas: definitions, modelling, market consistent valuations, what do option prices tell us?, opportunities, trends

#### Expected outcome

Paper and presentation for the 2004 Finance & Investment Conference

#### Progress to date

Paper presented to 2004 Finance & Investment Conference

#### Paper can be found at

<http://www.actuaries.org.uk/link/proceedings/fib2004/index.html>



**Membership**

*Chairman: Popat, Hemal*

*Other members: Coetzee, Jan; Fullerton, Norbert; Hewlett, Patrick; McIvor, Malcolm; Pendleton, Alan*

### **Dynamic hedging strategy of cash guarantees using portfolio insurance** – Completed 2004

**Objectives**

Terms of reference: To produce a report incorporating research into the dynamic hedging strategy of cash guarantees using portfolio insurance

**Expected outcome**

Paper and presentation at the 2004 Finance & Investment Conference

**Progress to date**

Paper presented to 2004 Finance & Investment Conference

**Paper can be found at**

<http://www.actuaries.org.uk/link/proceedings/fib2004/index.html>

**Membership**

*Chairman: Bouchaib, Rachid*

### **Education – Completed 2004**

**Objectives**

Terms of reference: To produce a paper through research into the use of mean reversion and the effect on capital requirements

**Expected outcome**

Produce a paper/presentation for the 2004 Finance & Investment Conference

**Progress to date**

Paper presented to 2004 Finance & Investment Conference

**Paper can be found at**

<http://www.actuaries.org.uk/link/proceedings/fib2004/index.html>

**Membership**

*Chairman: Smith, Andrew*

*Other members: Exley, Jon; Mehta, Shyam*

### **Fixed interest investment – Completed 2004**

**Objectives**

Terms of reference: To prepare a paper incorporating research in some or all of the following areas: quantifying liquidity rules for PPFMs, are FSA rules causing risky bond investments for Life Assurers, term premia, credit risk, life office issues.

**Expected outcome**

Paper and presentation to the 2004 Finance & Investment Conference

**Progress to date**

Paper presented to 2004 Finance & Investment Conference

**Paper can be found at**

<http://www.actuaries.org.uk/link/proceedings/fib2004/index.html>

**Membership**

*Chairman: Eason, Scott*

*Other members: Crouch, Sara; Dyer, David; Findlater, Alex; Fulcher, Paul; Jolly, Paul; Lachman, Roshan; McGaughey, Kenneth W; Pendleton, Alan*

### **Pricing and modelling business (not just financial institutions) – Completed 2004**

**Objectives**

Terms of reference: To produce a paper incorporating research on pricing and modelling business

**Expected outcome**

Produce a paper/presentation for the 2004 Finance & Investment Conference

**Progress to date**

Paper presented to 2004 Finance & Investment Conference

**Paper can be found at****Membership**

*Chairman: Jones, Richard*

*Other members: Fullerton, Norbert; Hargreaves, David; Mulvihill, Noel; Sykes, Ian*



## 6

## General insurance board working parties

If you are interested in participating in one of the on-going working parties, or have another topic to suggest, please contact the Chairman to the General Insurance Research Organising Committee (GIRO): - [Catherine Barton](#) (tel: 01372 824 012, e-mail: [cabarton@bw-deloitte.com](mailto:cabarton@bw-deloitte.com)) and the Secretary to GIRO: - [Peter Stirling](#) (tel: 020 7632 2177), email: [peter.stirling@actuaries.org.uk](mailto:peter.stirling@actuaries.org.uk))

**Asbestos – Completed 2004****Progress to Date**

Paper presented to GIRO 2004

**Paper can be found at**

<http://www.actuaries.org.uk/files/pdf/proceedings/giro2004/Lowe.pdf>

**Membership**

*Chairman: Lowe, Julian*

*Other members: Gravelsons, Brian; Hawes, Wendy; Jakubowski, Sylwia; Kent, Anthony; Macnair, Andy; Michaels, Darren; Morton, Anita; Sanders, David; Towell, Philip; Whiting, Andy; Widdows, James; Williams, Anthony*

**The Application of Strategic Theories to non life Insurance markets – Planned 2004****Expected outcome**

Paper for GIRO 2005

**Membership**

Badal, Veekash; Ball, Matthew; Flower, Mark; Fulcher, Graham; Haria, Sejal; James, Gillian; Julian, Mark; Khan, Mohammad; Massey, Roger; Ooi, Peng Kee; Skelding, Richard; Truong, Buu; White, Martin; Winter, Richard

**Aviation Pricing – Planned 2004****Objectives**

Aim of project: To produce some pricing models. To offer explanations for recent claims trends.

**Expected outcome**

Paper for GIRO 2005

**Membership**

*Brown, Matt; Foord, Alex; Fulcher, Graham; Grenon, Veronique; Harding, Justyn; Maddocks, Matthew; Maguire, Matthew; Patfield, Steve; Power, Richard*

**Capital Allocation – Planned 2004****Objectives**

To examine how to allocate capital. To look at different types of capital and describe different capital allocation methodologies and determine what makes a good measure of these. The Working Party should evaluate the different methodologies examined and consider possible considerations and pitfalls. Finally the working party should look at how to implement these methodologies, etc.

**Expected Outcome**

Paper for GIRO 2005

**Membership**

*Archer-Lock, Phil; Bradley, Cormac; Cockroft, Mark; Hartington, Tony; Hooker, Nigel; Hyllested, Lars; Jewell, Malcolm; Kerley, Colin; Kistnassamy, Krish; Maher, George; Skelding, Richard; Thomson, Kartina Tahir; Truong, Buu; Zlateva, Anna*

**Claims Inflation Working Party – Planned 2004****Objectives**

Terms of Reference: To investigate claims inflation on liability lines of business.

Aims of project: To identify sources of information on claims inflation; To consider the range of factors that influences the level of claims inflation. Input on this will be sought from actuarial, underwriting and claims perspectives; To consider the different influences on trends in the frequency and severity of claims; To consider the different influences on the inflation of indemnity and expense amounts; To consider the different influences on claims inflation for large and small claims; To consider the gearing effect of claims inflation on higher layers; To undertake a survey to ascertain the range of claims inflation assumptions currently being employed by actuaries in the UK, and to investigate how they derive their assumptions; To produce a paper for discussion at GIRO 2005 documenting the findings of the Working Party.

**Expected outcome**

Paper for GIRO 2005

**Membership**

*Chairman: Sheaf, Simon*

*Other members: Brickman, Simon; Forster, Will*



## Cycle survival kit II – Completed 2004

### Progress to Date

Paper presented to GIRO 2004

### Paper can be found at

<http://www.actuaries.org.uk/files/proceedings/giro2004/Wenzel.ppt>

### Membership

*Chairman: Wenzel, Kevin*

*Other members: Archer-Lock, Philip; Brown, Stuart; Doman, Richard; Fisher, Steven; Hilder, Ian; Simmons, David*

## Duty of Care for General Insurance – Planned 2004

### Expected Outcome

Paper for GIRO 2005

### Membership

O'Reilly, Kate; Steenkamp, Charles; Tripp, Michael

## Effect of the Courts Act – Planned 2004

### Expected Outcome

Paper for GIRO 2005

### Membership

*Blake, Steven; Brossart, Fabrice; Cernesson, Catherine; D'Souza, Glen; Howard, Sheree; Monk, Joe; Pearson, Catherine; Reid, Jamie; Ross, Fiona; Russell, Cheryl; Sheaf, Simon; Williams, Anthony; Yeates, Gary*

## Estimation of Uncertainty in reserves (GRIT) – Planned 2004

### Objectives

GRIT Associated Working Party: Measuring Reserving Uncertainty

GRIT Liaison:

Final Terms of Reference: What methods are currently available to measure uncertainty: What are the issues with using these various methods?; Which aspects of reserving uncertainty are not addressed by these methods?; Which methods are best for the various types of uncertainty measure?; Are there adequate methods available, or do we need to invent new ones?

### Expected Outcome

Paper for GIRO 2005

### Membership

*Bruce, Neil; Collins, Doug; De Silva, Nigel; Fisher, Steven; Kam, Hanna; Mathews, Steve; Michaels, Darren; Morton, Anita; Shah, Alpesh*

## Fair Value Accounting – Planned 2004

### Expected Outcome

Paper for GIRO 2005

### Membership

*Fisher, Steven; Hosken, Gladys; Kortebein, Christian; Malone, Mark; McPherson, James; Russell, Cheryl; White, Martin*

## GRIT Working Party – Planned 2004

### Expected Outcome

Paper for GIRO 2005

### Membership

*Aghadiuno, Chika; Angell, Kate; Flower, Mark; Hara, Sejal; Johnson, David; Khan, Mohammad; Kortebein, Christian; Lee, Alex; Piper, Jonathan; Shah, Alpesh; Spratt, Christopher; Upson, James; Wilcox, Stephen*

## ICA – Planned 2004

### Objectives

Investigate the options for issuing guidance by the Institute in respect of the production of ICAs. Consider the scope and the skills sets required. Consider the pros and cons of the different interested parties.

### Expected Outcome

Paper for GIRO 2005

### Membership

*Brooke-Taylor, Tony; Delbridge, Paul; Ellis, Phil; Hill, Gavin; Hitchcox, Andrew; Maher, George; Shah, Nylesh*

## Information and Risk (from Black Holes to Black-Scholes) – Planned 2004

### Expected Outcome

Paper for GIRO 2005

### Membership

*Hawes, Wendy; Hitchcox, Andrew; Regan, Natasha; Sanders, David; Shaw, Richard*

## International Accounting Standards Board – Completed 2004

### Progress to date

Paper presented to GIRO 2004

### Paper can be found at

<http://www.actuaries.org.uk/files/pdf/proceedings/giro2004/White.pdf>

### Membership

*Chairman: White, Martin*

*Other members: Hosken, Gladys; Leigh, Julian; Malone, Mark; Marcuson, Alex; Nicholson, Erica; Rogerson, Tim*



## Math. Toolkit for Actuaries – Planned 2004

### Objectives

Terms of reference:

1. To identify useful mathematical techniques that might be used in the fields of pricing and capitalisation (and possibly reserving) that might be used by actuaries to improve their effectiveness.
2. To illustrate these techniques using worked examples, with technical information provided in "insert boxes" in the paper.
3. If possible, and appropriate, to develop simple software tools (e.g. Excel add-ins) to be used by actuaries.

### Expected Outcome

Paper for GIRO 2005

### Membership

*Frisby, Susanne; Hawes, Wendy; Horrocks, Sally; Nye, Roger; Orr, James; Rasmussen, Kare; Tanser, James; Tsanakis, Andreas*

## Predictive Dependencies – Planned 2004

### Expected Outcome

Paper for GIRO 2005

### Membership

Claus, Stefan; Sokolova, Maria; Wong, David

## Professional Issues – Completed 2004

### Objectives

Consider what professional and/or other regulatory framework would best promote recognised, high-quality and continuously developing actuarial standards, openness in the application of actuarial skills, transparency in the professional conduct of actuaries, accountability for their actions and an open and competitive market for actuarial advice in the UK.

### Progress to date

Paper presented to GIRO 2004.

### Paper can be found at

<http://www.actuaries.org.uk/files/proceedings/giro2004/Newman2.ppt>

### Membership

*Hilary, Neil; Khan, Mohammad; Newman, Andrew; Pryor, Louis; Wilcox, Stephen; Winter, Richard*

## Reinsurance Pricing – Planned 2004

### Objectives

"Reinsurance pricing – decision making with imperfect information in an illiquid market".

To encourage debate by coming up with a challenging "advancement of thought"; To consider wider aspects of capital usage in the context of reinsurance pricing; To consider the act of negotiation to determine a reinsurance price; To conduct a survey of reinsurers to

gauge their views and processes regarding how they come to a final price and the extent to which it is informed by "hard" factors rather than "soft".

### Expected outcome

Paper for GIRO 2005

## RMS Offshore Gulf of Mexico cat modelling for practitioners – Planned 2004

### Expected outcome

Paper for GIRO 2005

### Membership

Harding, Justyn; Jowett, Tom; Ross, Julian

## So you're a qualified actuary but are you qualified to manage? – Planned 2004

### Expected outcome

Paper for GIRO 2005

### Membership

*Airey, Mark; Burke, Martin; Hilary, Neil; Masi, Laura; Russell, Wendy; Stirling, Peter*

## Statutory Actuarial Involvement in Non-life Reserving – Completed 2004

### Progress to date

Paper presented to GIRO 2004.

### Paper can be found at:

<http://www.actuaries.org.uk/files/pdf/proceedings/giro2004/Newton.pdf>

### Membership

*Chairman: Newton, Derek  
Other members: Bulmer, Richard; Felisky, Kendra; Hindley, David; Theaker, David*

## Stress Testing and Scenario Analysis – Completed 2004

### Progress to date

Paper presented to GIRO 2004.

### Paper can be found at:

<http://www.actuaries.org.uk/files/proceedings/giro2004/Shaw2.ppt>

### Membership

*Chairman: Shaw, Richard  
Other members: Archer-Lock, Philip; Gillott, Nigel; Regan, Natasha; Tang, Oliver*



## 7 Life board working parties

If you are interested in participating in one of the planned or ongoing working parties, or have another topic to suggest, please contact the Secretary to the Life Board's Research Committee –

Audrey Cosens tel: 020 7632 2118, e-mail: [audrey.cosens@actuaries.org.uk](mailto:audrey.cosens@actuaries.org.uk)

### Comparisons of With-profits Business in Other Countries – Discontinued, May 2004

#### Objectives

Aim of Project: At least initially, the research will focus on the EU (but including Switzerland). There are three broad areas:

#### Terms of Reference:

- (a) The Customer Proposition: The customer need the product is designed to meet – any analogies to the historic UK debt repayment vehicle, utilisation of lump sum investments for general investment, impact on pension provision, etc. Forms of fiscal subsidy, particularly bench marked against competing savings media. Availability of investment guarantees, disclosed smoothing policy, etc. Market share, both to other forms of insurance provision, as the Profession's Sandler response envisages, but also to other forms of savings, ash and mutual funds. Market dominance of largest players. Current or historic impact of controlled pricing mechanisms. Distribution, actual and anomalies (for instance, the business mix of banc assurance against IFA equivalents/controlled sales forces). Actual commission and cost basis.
- (b) The underlying investment vehicles. Asset allocation of underlying fund, including standards of disclosure. Impact on capital markets – for instance, belief that some European bond markets are more strongly influenced by the policy of insurers than the more liquid UK market. Impact of common Euro interest rate base. Interaction with Shareholder funds (the UK 90/10 structure is quite unique). Governance and transparency of investment decisions. Governance and transparency of payout mechanisms.
- (c) Technical reserving bases. Leading to a conclusion on the practicality of cross border arbitrage.

#### Membership

Chairman: Paul Bradshaw [brdshwpl@aol.com](mailto:brdshwpl@aol.com)

### Embedded Values – Completed

#### Objectives

Terms of Reference – To review and develop the reporting of traditional embedded values and summarise some of the reasons why this is now undergoing change. To consider the purpose of an embedded value calculation and the effect of differing attitude to risk.

#### Progress

Sessional Paper

#### Paper can be found at

<http://www.actuaries.org.uk/files/pdf/sessional/sm20050228.pdf>

#### Membership

*Pat O'Keefe; Amish Desai; Kamran Faroughi; Gary Hibbett; Alan Maxwell; Sandy Sharp; Neil Taverner; Mike Ward; Frazer Willis.*

### Investment Strategy for With-profits and Non-profit Long-Term Business – On-going

#### Objectives

Aim of Project: To consider, research and report on investment strategy issues for life offices.

Terms of Reference: Specifically an initial project to consider an investment strategy to achieve an appropriate match to liabilities for a with profits fund with liabilities subject to guarantees and smoothing. To consider the risks and rewards offered by a range of asset classes.

#### Progress to date

Session held at the 2004 Life Convention

#### Paper can be found at

<http://www.actuaries.org.uk/files/pdf/proceedings/life2004/Spiers.pdf>

#### Membership

*Chairman: Tony Spiers  
([tony.spiers@norwich-union-life.co.uk](mailto:tony.spiers@norwich-union-life.co.uk))  
Other members: Jon Exley, Tim Harris, Trevor Maynard, Professor Mike Wickens, Colin Wilson.*



## Life Office Taxation – Ongoing

### Objectives

Aim of Project: To keep the profession informed of developments in the field of Life Office Taxation.

Terms of Reference:

- 1) To keep abreast of new developments
- 2) To analyse their impact
- 3) To inform the Profession as appropriate.
- 4) As a subsidiary objective, to consider the impact of some of the more complex aspects of UK life office taxation on actuarial work.

### Expected outcome

Articles on different aspects of life office taxation in The Actuary magazine.

### Progress to Date

Sessions at 2000, 2001 & 2004 Life Conventions; a number of articles and columns published in The Actuary.

### Papers can be found at

[http://www.actuaries.org.uk/Display\\_Page.cgi?url=/life\\_insurance/taxwp/index.html](http://www.actuaries.org.uk/Display_Page.cgi?url=/life_insurance/taxwp/index.html)

### Membership

*Chairman: Paul Turnbull*

*(paul.turnbull@eu.watsonwyatt.com)*

*Other members: Morris Forbes, Steve Jones, Matthew Taylor, Keith Wild*

## Management of Closed Funds – Ongoing

### Objectives

Aim of Project: To identify risk areas and issues relating to the management of closed funds and to identify some possible solutions.

### Progress to date

Drafting of SIAS paper underway.

### Membership

*Chairman: Julie Pallister*

*(Julie.pallister@centurylife.plc.uk)*

*Other members: Andy Burke; Andrew Holtham; Peter Morris; Tim Pindar; Geoff Ross; Alastair Smith; Andrew Walton; Andrew Wells; Stuart Wilkinson*

## Operational Risk in Life Assurance – Ongoing

### Objectives

Terms of Reference

To develop a practical approach to assessing operational risk capital requirements for the ICA calculation.

### Progress to date

First meeting held on 3 March 2004. Progress report presented to Life Convention 2004.

### Membership

*Chairman: Nick Dexter*

*Other members: Cameron Mills*

## Product Reviews – Ongoing

### Objectives

Aim of project: To review current practice with regard to product reviews and to the extent considered appropriate, to make recommendations as to best practice.

Terms of reference: The objective of the Working Party is to review current practice with regard to product reviews and, to the extent considered appropriate, to make recommendations as to best practice. The scope of the Working Party's review is to include consideration of: 1) individual live and pensions products where either the original premium was chosen with the intention of achieving a certain target level of benefits on maturity or retirement or for a period of time and/or the terms of the product (e.g. expense or risk charges) can be varied; 2) The timing or reviews. 3) Assumptions made regarding future experience. 4) Policyholders' reasonable expectations. 5) Policyholder communications. 6) Remedial action taken or offered to policy holders.

### Progress to date

Sessions at the Life Convention 2000 and 2004.

### Membership

*Chairman: Paul Turnbull*

*(paul.turnbull@eu.watsonwyatt.com)*

*Other members: Stuart Gracie; Chris Lewis; Geoffrey Maddock; Tim Potten; Charles Wood.*

## Protected Investment Products – Discontinued

### Objectives

To conduct a swift "product review" of terms and conditions, reserving, pricing and whether the products were being purchased by the right consumers at the right time and a consideration of regulatory issues relating to selling practices and prudential reserving.

Terms of Reference: To research issues such as

- 1) How the products currently or recently marketed work.
- 2) What the risks are to the provider and the consumer.
- 3) How the risks should be explained to consumers.
- 4) How the products should be sold and regulated.
- 5) To identify further areas of work worthy of more in-depth study.

### Expected Outcome

A SIAS paper, information posted on the Profession's website.

### Membership

*Chairman: David Vallery*

*(davidvallery@HBOSplc.com)*

*Other Members: Kathy Byrne; Colin Dickie; Paul Nevin; Richard Schneider.*



## Risk Management in the Financial Services Industry in Relation to Regulatory Changes on Capital Adequacy – Ongoing

### Objectives

Terms of Reference

To review the methodologies available in other industries, especially those adopted in the banking industry; To identify whether any of these methodologies could potentially be applied in the insurance industry; To combine the results of this working party with the working part on risk management practices in the life assurance industry; To take the combined findings of both working parties forward in identifying opportunities for actuaries to remain at the forefront of risk management techniques in life companies.

### Expected Outcomes

Reports to the Life Board, updates to professional forums and an article for The Actuary.

### Membership

Chairman: Mark Train (mark.train@uk.pwc.com)

## Risk Management Practices in Life Assurance – Ongoing

### Objectives

Terms of Reference: Establish what risk management practices are used by UK life assurance companies; Analyse the differences between firms that are part of a banking group and by others; Analyse the differences between listed companies and others; Establish which are the practices that actuaries have found the most effective.

### Progress to date

A paper on Liquidity Management in UK Life Assurance has been posted on the Profession's website.

### Paper can be found at

[http://www.actuaries.org.uk/files/pdf/Life\\_insurance/LiquidityReportSept04.pdf](http://www.actuaries.org.uk/files/pdf/Life_insurance/LiquidityReportSept04.pdf)

### Membership

Chairman: Chris O'Brien

(Christopher.o'brien@nottingham.ac.uk)

Other members: David Bartlett; Mark Chaplin; Kevin Dowd; Jim Ewing; Patrick O'Kelliher

## Understanding the Implications of PSB Capital Categories to Life Companies – Ongoing

### Objectives

To produce a paper which:

- 1) describes how banks manage their capital base using the regulatory capital structure a) to maximise their ROE; b) To maximise their ROC;

- 2) Sets out relevance to long term business
  - a) to what extent can tier 2 capital realistically be used?
  - b) what types of liabilities can it be used to cover?
  - c) Would some of it behave in sympathy with changes in resilience capital?
  - d) Any other observations.
- 3) The Working Party is not required to carry out a formal ALM analysis.

### Progress to date

Report produced for the November 2004 Life Convention

### Membership

Chairman: Icki Iqbal (iikbal@deloitte.co.uk)

Other Members: Clare Beale; Rolf van den Heever; Tim James; David Joyce; Paula Kelly; Mark Versey.

## Underwriting – Ongoing

### Objectives

Terms of Reference – To define and communicate methodology for deriving bases for underwriting policies and decisions; to identify and investigate opportunities for the application of actuarial disciplines to new or improved methods of assessing insurance risk and expressing this in the terms offered on individual risk.

### Membership

Chairman: Debbie Akers

## Use of Derivatives in Life Assurance – Ongoing

### Objectives

Aim of Project: To analyse examples of derivatives use.

Terms of Reference: The aim of the working party is to consider examples where life assurance companies are currently utilising derivatives, or might like to use derivatives and to establish if companies believe their use of derivatives is constrained.

### Progress to date

Session at Life Convention, 2003. SIAS paper entitled "Derivatives and Dynamic Asset Allocation in With-Profits funds – some implications for capital and policyholder returns" presented on 15 June 2004

### Paper can be found at

[http://www.sias.org.uk/papers/derivatives\\_wp.pdf](http://www.sias.org.uk/papers/derivatives_wp.pdf)

### Membership

Chairman: Martin Muir

(martin.muir@eu.watsonwyatt.com)

Other members: Andrew Chase; Paul Coleman; Paul Cooper; Gary Finkelstein; Paul Fulcher and Tim Wilkins.



## 8 Pensions board working parties

If you are interested in participating in one of the planned or on-going working parties, or have another topic to suggest, please contact the Secretary to the Pensions Research and Technical Support Committee –

Margaret Marchetti (tel: 020 7632 2184, e-mail: [margaret.marchetti@actuaries.org.uk](mailto:margaret.marchetti@actuaries.org.uk))

### The Management of the Discontinuance of Large Defined Benefit Schemes – Completed 2004

#### Objectives

Terms of reference: To consider the issues faced on the discontinuance of large defined benefit schemes.

#### Progress to date

First meeting held on 20 November 2002. Reporting deadline 30 April 2003. Presented as a paper to SIAS on 16 November 2004.

#### Paper can be found at

<http://www.sias.org.uk/papers/discontDB.pdf>

#### Membership

*Chairman: Booth, Geoff* ([gbooth@highamnobbs.co.uk](mailto:gbooth@highamnobbs.co.uk))  
*Other members: Agius, Russell; Canham, Dennis; Frankland, Ralph; Jackson, Lawrence; Miller, James; Wharmby, Neil; Wilson, Brian; Yiasoumi, Costas*

### Mortality Investigations – On-going

#### Objectives

Aim of project: To investigate the mortality of pensioners of self-administered pension schemes with a long-term view of publishing standard tables if thought appropriate; interim reports to be published annually.

Terms of reference: To decide what interim reporting to Scheme Actuaries might be appropriate.

To agree what other analyses need to be done before a formal document is published.

#### Expected outcome

- 1) Annual progress reports with minimal interpretation – so that scheme actuaries can see progress with minimal delay;
- 2) Other reports with more in-depth analysis from time to time;
- 3) Standard tables by 2009, but possibly earlier (2007/08) if data considered sufficient.

#### Progress to date

Two papers have been produced, CMI Working Papers 4 (March 2004) and 9 (November 2004). See below for web link.

#### Paper can be found at

[http://www.actuaries.org.uk/Display\\_Page.cgi?url=/cmi/cmi\\_workingpapers.html](http://www.actuaries.org.uk/Display_Page.cgi?url=/cmi/cmi_workingpapers.html)

#### Membership

*Chairman: Wilson, Brian* ([brian.wilson@hewitt.com](mailto:brian.wilson@hewitt.com))  
*Other members: Bodie, Nigel; Gaches, Andrew; Lowlar, Jonathan*

### Risk Benefits – On-going

#### Objectives

Terms of reference: To determine the extent of self-insurance of risk benefits of occupational pension schemes. To analyse schemes that self insure by: a)size of scheme b)size and rating of employer. To determine types of risk benefit insurance effected by schemes, analysed by: a)size of scheme b)size and rating of employer. To determine optimal risk-benefit insurance strategy for schemes differentiating by size of scheme, size of employer and rating of employer.

#### Expected outcome

Paper for consideration by the Pensions Board.

#### Progress to date

Questionnaire issued and results collated and analysed.

#### Membership

*Chairman: Cowell, John* ([John.Cowell@mercer.com](mailto:John.Cowell@mercer.com))  
*Other members: Cowell, Deborah; Gilling, Martin; Mailander, Suzanne; Mittal, Vijay; Wilson, Brian*

### Valuation Rates of Interest – On-going

#### Objectives

Terms of reference: To consider: Reasonable ranges for setting discount rates including some indicators on judging the degree of conservatism in the basis at any time. Setting financial assumptions including the expected long term return on assets for Company accounts. Communication to members of the implications of the approach taken. (This work will consider unfounded, unapproved schemes as well as funded schemes. How do you allow for reinvestment income. How do you allow for liabilities that are longer than the longest available gilts.

#### Expected outcome

Paper for presentation to local societies/SIAS.

#### Progress to date

A paper is being put forward for presentation to local societies and to SIAS.

#### Membership

*Chairman: Claringbold, Andrew*  
*Other members: Derbyshire, Gareth; Exley, Jon; Hall, Mike; Keogh, Tim; Slater, Andrew; Spain, Jon; Wise, Andrew.*



## 9

## Social policy board working parties

If you are interested in participating in one of the planned or on-going working parties, or have another topic to suggest, please contact the Social Policy Board Programme Manager

Martin Hewitt (tel: 020 7632 2185, e-mail: [martin.hewitt@actuaries.org.uk](mailto:martin.hewitt@actuaries.org.uk))

### Actuaries' Panel on Medical Advances

#### – On-going

##### Objectives

Aim of project: This project is a partnership between the Actuarial Profession and members of the Actuarial Mathematics & Statistics Department, Heriot-Watt University for which funding has been awarded from the EPSRC.

Terms of reference: Identify medical conditions to be studied (initially coronary heart disease); to review the literature on each condition; to identify appropriate data sets; to build a mathematical/stochastic model of the epidemiology of the condition; to quantify, either demographically and/or financially, the effects of new treatments or trends relating to the condition.

##### Progress to date

The Panel is on target to produce its report in 2006

##### Membership

*Chairman: Waters, Howard, Professor*  
([h.r.waters@ma.hw.ac.uk](mailto:h.r.waters@ma.hw.ac.uk))

*Other members: Baker, Bill; Chatterjee, Tushar; Croxon, Richard; Gallop, Adrian; Hangartner, Robert; Macdonald, Angus; Paul, David; Ridsdale, Brian; Robjohns, Neil*

### Consumer Understanding of Risk

#### – Completed

##### Objectives

The Actuarial Profession commissioned this project from Nick Chater of the University of Warwick as part of its consumer support programme of activities.

Terms of reference: To identify consumers' perceptions of risk; to identify factors producing risk aversion and risk-taking behaviour and where possible measure these factors; to identify time frames within which consumers exercise preferences; to understand and apply the implications of findings for financial services practitioners.

##### Expected outcome

Identify and review research literature and outline different theoretical perspectives on risk behaviour. Identify research on how contextual factors and the presentation of information influence the behaviour of financial consumers. Design and apply experiments in two stages to test financial consumer behaviour,

first using pilots and secondly a larger sample of subjects similar to financial consumers. Provide research reports for the Advisory Group.

##### Progress to date

Project now completed.

Report can be found at

[http://www.actuaries.org.uk/files/pdf/social\\_policy/ConsumerUnderstandingRiskRep.pdf](http://www.actuaries.org.uk/files/pdf/social_policy/ConsumerUnderstandingRiskRep.pdf)

##### Membership

*Chairman: Goodman, Alan*

([alan.goodman2@btinternet.com](mailto:alan.goodman2@btinternet.com))

*Other members: Murray, Brian; Taylor, John; Woods, Ian*

### Damages Working Party

#### Objectives

Terms of Reference: To respond to government proposals to develop income awards and other forms of structured settlements in addition to lump sum awards for personal injuries; to advance the application of actuarial techniques to the calculation of long standing income awards in judicial settlements.

Expected outcome: Articles/seminars

Paper can be found at: n/a

##### Membership

*Chairman: Owen, Robert* ([Robert.Owen@bacon-woodrow.com](mailto:Robert.Owen@bacon-woodrow.com))

*Other members: Carus, Anthony; Gallop, Adrian; Patel, Chinu; Pollock, John; Silverman, Anthony; Wilkinson, Stuart*

### Environmental Research Group

#### – On-going

##### Objectives

Terms of reference: 1) To identify and research areas in which actuaries can become, or will need to become, involved in environmental issues.

2) To identify environmental factors connected to fields in which actuaries are already engaged, the potential of environmental change on these areas, and the factors that actuaries should consider when giving advice.



### Expected outcome

To produce articles for The Actuary, raise awareness of the impact of environmental issues upon actuarial science.

### Progress to date

A SIAS Paper has been produced on the Impact of Climate Change Upon Financial Institutions' Medium To Long Term Assets and Liabilities.

Paper can be found at

<http://www.sias.org.uk/prog.html>

### Membership

*Chairman: Silver, Nick*

*([nick@gsilver92.freemove.co.uk](mailto:nick@gsilver92.freemove.co.uk))*

*Other members: Cornall, Monica; Czapiewski, Colin; Dickinson, Paul; Dlugolecki, Andrew; Hodge, Vanessa; Jackson, Lawrence; Perroy, Louis; Warren, Paul*

## Equity Release Working Party

– Completed

### Objectives

Terms of reference: To identify the barriers preventing the development of equity release provision; To review progress in developing equity release provisions, especially since January 2001 - the date when the profession's Equity Release Mechanisms Report was launched; To promote wider public interest in equity release, including developing a programme of public relations to inform the public of the role of equity release provision; To collect data to support wider understanding of equity release - including data on mortality and surrender rates, mortgage statistics and trends, and other financial information reflecting market trends - and make this available to interested parties; To identify impediments to the development of equity release and the risk factors involved; To promote greater understanding of the role that regulation can play in the product market; To clarify the implications of equity release for actuarial practice and knowledge, for example with regard to product pricing and reserving.

### Expected outcome

Report and Sessional Paper

### Progress to date

The Group's findings were launched in January 2005

Paper can be found at:

[http://www.actuaries.org.uk/files/pdf/equity\\_release/equityreleasejan05v1.pdf](http://www.actuaries.org.uk/files/pdf/equity_release/equityreleasejan05v1.pdf)

### Membership

*Chairman: Hosty, Ged ([viv.davies@ers-ltd.co.uk](mailto:viv.davies@ers-ltd.co.uk))*

*Other members: Bergman, Bernhard; Gardner, Caroline; Hancock, Ruth; Johannes, Mark; Le Grys, Des; McAteer, Mick; MacDonald, Alisdair; Osgood, Glenn; Wright, Bob*

## Family Policy Research Group

– Completed

### Objectives

Terms of reference: 1) Produce leaflet for public on family policy options, fertility and longevity; 2) Produce longer paper; 3) Establish profession's authority on family policy

### Progress to date

Produced booklet "More Babies Who Needs Them?" in May 2004. Article published in The Actuary, July 2004. Group terminated.

Paper can be found at:

<http://www.actuaries.org.uk/files/pdf/morebabies.pdf>

### Membership

*Chairman: Lewis, David ([david.lewis@gad.gov.uk](mailto:david.lewis@gad.gov.uk))*

*Other members: Coleman, David; Grenham, Dermot; Hobro, Clare; Lewin, Chris; Orros, George; Ridsdale, Brian*

## Genetics and Insurance - Issues for Social Policy – On-going

### Objectives

Terms of reference: Drawing on expertise of the Group to inform the profession of: current knowledge about actuarial research, social policy issues, issues on pooling, philosophical issues on equity, fairness, moral hazards and so forth, and future implications.

### Progress to date

A Sessional Paper was presented in the 2003 Session. Chris Daykin presented paper on 'Current issues in genetics affecting health insurance' at Health & Care Conference April 2004.

Papers can be found at:

<http://www.actuaries.org.uk/files/pdf/sessional/sm030224.pdf>

<http://www.actuaries.org.uk/files/pdf/proceedings/health2004/Daykin.pdf>

### Membership

*Chairman: Daykin, Chris ([chris.daykin@gad.gov.uk](mailto:chris.daykin@gad.gov.uk))*

*Other members: Akers, Debbie; McGleenan, Tony; Macdonald, Angus; Paul, David; Robjohns, Neil; Turvey, Peter*



## Public Expectation of Pension Provision

### Objectives

This research was commissioned by the Profession from Peter Taylor-Gooby, Professor in Social Policy, University of Kent.

Aims: To examine changes in the public's expectations and understanding of pension provision in the context of current trends impacting on different types of provision.

Terms of Reference: To record evidence of change or continuity in peoples' views of pension provision during a period of falling values in savings assets and increasing liabilities; to identify the reasons people give for the above views; to examine their views on responsibility for pension provision and the priority attached to it; to gauge the moral views people hold or don't hold about charges affecting the restructuring of pensions provision.

Expected Outcomes: commissioned research report, delivered January 2005. Papers presented at conferences; published paper, Peter Taylor-Gooby (2005) 'Uncertainty, trust and pensions: the case of the current UK reforms', in Social Policy and Administration, Volume 39, no. 3, June.

Report can be found at:

[http://www.actuaries.org.uk/files/pdf/social\\_policy/PensProvRep.pdf](http://www.actuaries.org.uk/files/pdf/social_policy/PensProvRep.pdf)

Membership: Professor Peter Taylor-Gooby (University of Kent)

## Health and Care Committee

Contact: Martin Hewitt (tel: 020 7632 2185, e-mail: [martin.hewitt@actuaries.org.uk](mailto:martin.hewitt@actuaries.org.uk))

## Chronic Diseases Working Party

– Ongoing

### Objectives:

To research the prevalence and risk characteristics of chronic diseases using a variety of sources of primary care and socio-economic data.

Progress to date

Progress to June 2004: started research and obtained funding. No papers produced to June 2004

### Membership

Chairperson: Alder, Joanne  
([joanne.alder@milliman.com](mailto:joanne.alder@milliman.com))

Other members: Mayhew, Les (City University);  
Moody, Simon; Morris, Richard; Shah, Rajeev

## Critical Illness Trends Working Party

– Ongoing

### Objectives

To examine underlying trends in the factors influencing UK insured CI claims rates and from these to assess 1) the historic trend in incidence and death rates for the major critical illnesses and 2) any pointers for future trends in stand alone and accelerated CI.

### Expected outcome

Presented at Health Conference 2001, 2002 and 2003.

Two articles in The Actuary.

Critical Illness Seminar at Staple Inn, May 2003 and December 2004

Ultimate goal is to produce a SIAS paper in 2004/5.

### Membership

Chairman: Robjohns, Neil ([nrobjohns@munichre.com](mailto:nrobjohns@munichre.com))

Other members: Croxon, Dr Richard; Dinani, Azim; Elliott, Sue; Gallway, Hamis; Morris, Richard; Reid, Scott; Wells, Joanne

## Healthcare insurance – treating customers fairly (TCF) – Ongoing

### Objectives

This is a development of the Cash vs Care Working Party reported in the Annual Research Report 2003. Its objectives are:

- To focus on the care aspects of healthcare insurance products (short- and long-term)
- To identify different definitions of TCF among different parties to healthcare insurance products
- To consider the social policy implications of these products.

Outcomes

To be decided.

### Membership

Brown, Geoff; Gatenby, Peter; Moliver, Michael;  
Orros, George ([uhc.email@virgin.net](mailto:uhc.email@virgin.net))

## Income Protection Working Party – isolating occupational, regional and socio-economic influences – Planned

### Objectives

This is a new group and objectives have yet to be decided.

### Progress to date

Nothing yet to report.

### Membership

Dutoit, Johann; Meldrum, Neil; Singh, Darshan  
([dsingh@genre.com](mailto:dsingh@genre.com)); Spender, Anna;  
Woolnough, Keith



## Long-Term Care Working Party

– Completed

### Objectives

To undertake comparative study of systems of long-term care in Japan, Germany and Sweden and assess the impact of these systems on UK public expenditure.

### Progress to date

Paper presented at SIAS on 20 July 2004 on 'The comparative effects on UK public expenditure of implementing long-term care systems as practised in Japan, Germany and Sweden.

Paper can be found at

<http://www.sias.org.uk/papers/LTC.pdf>

### Membership

*Karlsson, Martin; Mayhew, Les*

*(L.D.Mayhew@city.ac.uk); Plumb, Robert H;*

*Rickayzen, Ben*

## UK Vaccination Programme - Risk and

Reward – On-going

### Objectives

To identify what actuaries can contribute to the study of the balance of risks (probability of experiencing adverse effect of vaccination versus risk of contracting illness by refusing vaccination) associated with vaccination programmes.

Terms of reference: To investigate, and hence stimulate informed debate and possible further studies on the balance between risk and reward in the current UK vaccination programme from an independently informed viewpoint. We do not aim to carry out any new investigations or studies but to interpret and assimilate existing data and studies. As part of our fact-finding we will try to discover whether any organisation currently monitors the trade-off between risk and reward and what mathematical or statistical models are used.

### Progress to date

The Working Party has been in existence since 2001. Workshops at 2001 and 2003 Health & Care Conferences 'UK Vaccination Programme: Risk & Reward' SIAS Paper.

Paper can be found at

<http://www.actuaries.org.uk/library/proceedings/health2001/Cornall.pdf>

<http://www.sias.org.uk/papers/Vaccination.pdf>

<http://www.actuaries.org.uk/files/pdf/proceedings/health2003/Cornall.pdf>

### Membership

*Chairperson: Cornall, Monica*

*(monica.cornall@kpmg.co.uk)*

*Other members: Chan, Margaret; Sparks, Jan*



## 10 University research contacts

Details of actuarial research activities in the following universities can be obtained from the addresses given.

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