



## The challenge of longevity

Actuaries from all over the world met in Helsinki on 21-23 May 2007 to address the implications of greater longevity for the provision of pension benefits. This was the



second Colloquium of the Pensions, Benefits and Social Security (PBSS) Section of the International Actuarial Association (IAA), which was launched in 2004 to offer continuing professional development opportunities to actuaries interested in pensions and social security at the international level. Although the details of pension and social security provision are usually quite country-specific, valuable lessons can be learnt from experiences in other countries.

The meeting started on a musical note with a lecture by a Finnish composer – Eero Hämeenniemi – who offered some fascinating insights into communication between people of different cultural backgrounds. A European musician has no difficulty communicating with an Indian musician in terms of melody but the Indian does not comprehend the European concepts of harmony and the European does not comprehend the Indian concepts of rhythm. This lecture was not only very interesting in its own right but also prepared us to overcome the challenges of communication between 160 actuaries from 32 countries, each having their own concept of what they think of as pensions and social security!

In many parts of the world people are living longer, and wanting to retire earlier, which presents huge challenges for social security schemes and for employer-sponsored and personal pension arrangements. The costs of financing a long life in retirement are placing a significant burden on public social security schemes. Employers in many countries are backing away from involvement in providing any financing guarantees for pension benefits. This means many defined benefit pension schemes being closed to new entrants and employers offering only a defined contribution arrangement for the future, with a contribution from the employer which is usually at a lower level than was previously being paid into the defined benefit scheme.

In a keynote lecture on the first day of the conference, Chris Daykin discussed a number of ways in which these problems can be addressed. He discussed recent reforms of social security in Finland, Sweden, Canada, Germany and the United

Kingdom, all of which are trying to share risks more equitably between generations and make future pension promises more affordable. Ways of doing this include the application of a life expectancy coefficient in Finland, a sustainability factor in Germany, higher retirement ages in the United Kingdom, sharing of any increase in costs between contributors and beneficiaries in Canada and a radical redesign of the Swedish social security into a notional defined contribution (NDC) scheme.

As is clearly evident in many countries, employer-sponsored defined benefit plans are also in need of radical change if they are to survive the pressures of greater longevity, increasing regulation, volatile investment returns, lower interest rates and the behavioural impacts of changing accounting standards. DB pension schemes may be able to survive if they adopt risk-sharing approaches such as are being pioneered in industry-wide schemes in the Netherlands, reducing guaranteed benefits and increasing the extent of discretion to improve benefits according to the investment returns. This concept was further developed in the presentation by Lans Bovenberg from the Netherlands.

Other possibilities for sharing risk more equitably include raising the age at which pension can be taken without any reduction and reducing future accrual rates. Some lateral thinking from the rise in popularity of defined contribution schemes, including NDC social security, suggests the possibility of restructuring defined benefit pension schemes to focus on the accrual of a defined amount of capital at retirement age, which can then be converted to a pension at the current cost of purchasing an annuity, rather than promising a guaranteed level of pension.

Some of the solutions being proposed may result in a reduction of member's rights, or at least relative to their expectations, but if radical action is not taken, and soon, many employees may lose access altogether to employer-sponsored pension rights.

Also under the heading of longevity and risk-sharing, Pablo Antolin from the OECD in Paris gave an interesting presentation on annuities and longevity risk and Gordon Wood spoke about the developing segmentation of the annuity market in the UK.

With all the publicity that there has been internationally in the Swedish social security reforms of the 1990s, everyone listened with interest to the paper by Kristoffer Lundberg on the Swedish scheme and the presentation by Karl-Gustaf Scherman, one of the architects of the reforms, who now has some doubts about the way in which things are working out. Scherman emphasized the various different features of the Swedish reform and the importance of identifying which part of the reform is concerned when the reform is praised or criticized. For Scherman the most controversial aspects are permanently fixed contributions and the operation of the automatic balancing mechanism, which others consider a great success for the achievement of long-term financial sustainability. The problem, as identified by Scherman, is that the consequences of demographic imbalances and economic stresses and strains all end up affecting the benefit levels, but this will happen without there being adequate debate and political consideration as to whether this is the desired outcome.

In his paper Masaaki Ono showed how the Swedish concept of the automatic balance mechanism is being applied in the Japanese context and Carmen Boado-Penas discussed a balance sheet approach, as in the Swedish 'actuarial accounting' to Spanish social security. Rob Brown from Canada discussed how to design an optimal social security system.

Under the topic of "Investment strategies and risk management" a series of papers and presentations by Andrew Young and Dave Gustafson looked respectively at the UK and US experience of pension guarantee funds, with the latter experiencing huge deficits and the former just getting started, and trying to avoid the problems that have been faced in the US. Other papers focused on various applications of asset/liability modeling and management in Finland, France and Japan, as well as a paper on the new equity-linked buffer in the Finnish mandatory earnings-related pension system. Doug Andrews offered an analysis from a Canadian perspective of some innovative ideas that have been proposed for pension plan investment.

The third main topic concerned 'Actuarial valuation methods and assumptions' and included a review by Chinu Patel of the surveys carried about by the Pensions Committees of the IAA and of the Groupe Consultatif on pension valuation methods and assumptions in different countries. Alvaro Castro-Gutierrez looked at actuarial valuation methods and assumptions in developing countries. There were several papers on various aspects of actuarial valuations of pension plans in Japan.

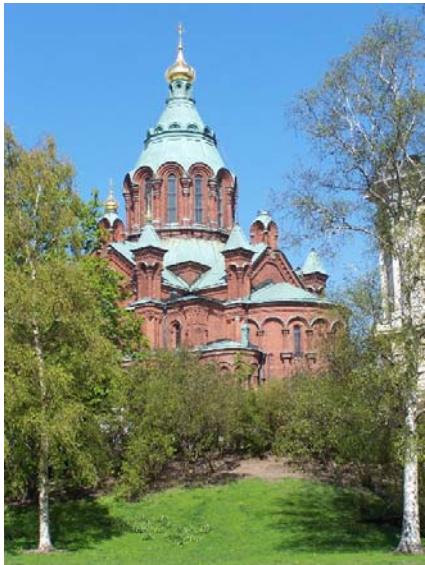
This theme continued on the third day, which was held jointly with the first day of the 15<sup>th</sup> International Conference of Social Security Actuaries and Statisticians of the International Social Security Association (ISSA), when actuarial methods and assumptions for national social security schemes were considered in a survey paper by Charles Cossette and colleagues at the Régie des Rentes du Québec. This paper, which looked mainly at actuarial valuations in industrialized countries, was complemented by a paper by Florian Léger, of the International Labour Office Social Security Department, on actuarial assumptions in reviews of social security schemes in developing countries.

Also on the morning of the joint day was an excellent lecture by Erkki Liikanen, Governor of the Bank of Finland and former European Commissioner. He covered the topic of the impact of the ageing population on markets and the impact of markets on pension provision.

The afternoon sessions of the joint day included a paper on the application of stochastic methodologies to social security projections, particularly based on the work of the Office of the Actuary of the US Social Security Administration over recent years. Whilst use of stochastic methodologies seems a good idea in principle, there is still some scepticism as to how useful they are, when so many of the assumptions are not very susceptible to deriving any soundly based distributions of potential outcomes.

Bertil Thorslund presented an account of work that has been going on between several countries to try to improve modeling and forecasting for social security projections.

Finally, Eduard Ponds presented an interesting paper on valuing intergenerational transfers in funded occupational schemes in the Netherlands.



All of the 30 or so papers presented at the conference, together with PowerPoint presentations, can be downloaded from the PBSS website at [www.IAA-PBSS.org](http://www.IAA-PBSS.org).

Apart from a stimulating professional programme, the PBSS Colloquium provided excellent opportunities for networking with pension actuaries from many other countries and several enjoyable social events in the evenings, including a reception on Sunday evening at the Restaurant Sipuli, just underneath the golden onion domes of the Russian Orthodox Cathedral, dinner on Monday evening at the Boathouse Restaurant on an island and a reception at the end of the joint ISSA day on

Wednesday, hosted by the Ministry of Social Affairs and Health at the Säätytalo, or House of Estates, a beautiful and historic building in the centre of Helsinki. The Säätytalo was built between 1888 and 1890 as a venue for meetings during the Assembly of the Representatives of the Estates, the predecessor of the Finnish Parliament. It is now used for government receptions and for some important government meetings.



The ISSA 15<sup>th</sup> International Conference of Social Security Actuaries and Statisticians continued on Thursday with presentation of papers on 'Optimizing pension financing under a changing demography and a volatile economy'. The main report was presented by Risto Vaittinen of the Finnish Centre for Pensions and this was followed by papers describing the national experience of the United States (paper by Steve Goss, presented by Alice Wade), Canada (CPPIB - Sterling Gunn and Régie des Rentes du Québec – Charles Cossette) and the Russian Federation (Alexander Kurtin).

In the afternoon attention turned to methods used in drawing up mortality projections. The main report was presented by Jean-Claude Ménard and Alice Wade, respectively covering the approaches used for projecting mortality in Canada and the United States. Professor Juha Alho of the University of Joensuu in Finland presented a paper on

predictive distributions of future mortality and Chris Daykin presented a paper by the UK Government Actuary's Department (Adrian Gallop) on projecting mortality in the UK.

On Thursday evening the Finnish Centre for Pensions and the Social Insurance Institution hosted an excellent reception and dinner at the Restaurant Kalastajatorppa, which featured music from an accomplished trio from the Finnish Academy of Music.

On the final day of the ISSA conference, papers were presented on 'Methods of financing health care'. The main report was from Anne Drouin of the ILO Social Security Department and this was complemented by papers on Finland (Jussi Haapaho) and the United Kingdom (James Thompson).

The ISSA Conference was attended by about 230 people from 70 countries. The papers presented at the ISSA Conference can be downloaded from the website [www.issa.int](http://www.issa.int)

Our thanks go to the organizing committees of the two meetings, chaired by Hillevi Mannonen (PBSS – currently also the President of the IAA) and Jukka Rantala (ISSA – currently also the Chairman of the Groupe Consultatif). The whole week was extremely well organized and judged by all participants to have been a great success.

If you were unlucky enough to miss the Helsinki meeting, you should put in your diary now the dates of the next PBSS Colloquium, which will be held in Boston, Massachusetts on 4-7 May 2008. The 2008 Colloquium will be organized jointly by the PBSS, IAAHS (health actuaries) and IACA (consulting actuaries) sections of the IAA and promises to be a first-class event in the international actuarial calendar.

Chris Daykin  
Chairman, PBSS Section of the IAA