Mortality today

From the earliest records of mankind, we know that people have been searching for ways to postpone, if not eliminate, the end. Now, postponement, at least, is happening. Thanks mainly to advances in medicine and better living habits, a man retiring at 65 in the UK will probably live for another 21 years. A 65 year old man retiring sixty years ago lived, on average, for only another 12 years.

Unfortunately, like King Midas, we are finding that what we thought was gold is not an unalloyed benefit. Increased life expectancy does not necessarily come with the maintenance of all faculties and powers. It puts strains on families needing to get on with succession. And it is complicating the business of financing old age.

From the individual's point of view, the issues surrounding the financing of old age are much the same as they have always been. How long can I expect to live? What is the rate of inflation likely to be? What is the likelihood of becoming infirm or disabled? But the answers are no longer as readily available, leaving us with the worry that we will not save enough and so end up in misery.

If these issues are challenging for individuals, they are equally so for organisations, such as insurance companies and pension funds, whose businesses are about the provision of finance for old age. For these organisations, the difference between profit and loss, between surplus and deficit, hangs largely on the forecasts that they make about mortality, inflation and other factors – ie how much they are going to have to pay out when their customers retire.

In some cases, such as a pension fund sold to someone aged about 25, the forecasts cover a very long time in the future. Managers know that the one certainty about such long-range forecasts is that they will be wrong. But they don't know whether the error will be on the high side or the low side.

It would be one thing if the improvement in life expectancies that we have seen over the past half-century were a one-off, and mortality rates were to stay the same as they are now. The problem is that no one knows whether we are at, or reaching, what could be called the limits of the ability of the human body to survive, or whether life expectancies could expand much more in the future.

For instance, the group of people in the world who now live longest – Japanese women – is also the group whose life expectancy is growing the most quickly.

Assumptions about future mortality rates can have significant impacts on the financing of old age.

For pension schemes, if future mortality rates are overestimated – as has been the case in many funds in recent years – contribution rates will not be high enough, and there will not be enough money in the fund to pay out promised benefits.

For annuities, customers will pay less than the benefits are worth, and insurance companies will make lower than expected profits on these products and be subject to a greater risk of insolvency.

For protection products such as term insurance, customers will pay more than they need have done, and insurance companies will make higher than expected profits on these products.

But if future mortality rates are underestimated, contribution rates for pension schemes will be higher than necessary, customers will pay more than they need for annuities, and insurance companies will lose money on protection products.

To get an idea of the impact of changes in expected mortality on financing costs, assume that a man aged 65 can buy an annuity of £10,000 per annum for a lump sum of £140,000, based on an average life expectancy of 21 years. If the life expectancy is changed to 25 years, he might have to pay £150,000 for the same annuity, an increase of £10,000 or 7%.

The people who are really in the hot seat as a result of these developments are actuaries. They are the professionals who study the statistics, weigh up the various factors and come up with estimates of future mortality rates on which insurance companies, pension funds and others depend to work out the premiums or contributions they need from their customers.

Actuaries have come in for much criticism in recent years for not spotting the improvements in life expectancies quickly enough. At the present time it is difficult to be sure whether that criticism is justified. But today, their task is even more difficult because of the large uncertainties over future trends. Like investment managers, they must face the fact that past performance may not be a reliable guide to future outcomes.

It is in this context that significant developments are taking place in the regulatory framework. The Pensions Regulator has recently issued a consultation paper on good practice when choosing funding assumptions for defined benefit pension schemes, which includes proposals for a new approach to looking at mortality assumptions.

For its part, the Board for Actuarial Standards has published a discussion paper on the issues surrounding mortality.

A prominent theme in these developments is transparency. At a time when there is no consensus on long term mortality trends or the meaning of various sets of statistics, it is vital that actuaries clearly justify how they have reached their conclusions and spell out the uncertainty surrounding them. Knowing how the forecasts were arrived at will help insurers and pension fund trustees with the difficult judgements that they have to make.

Copies of the discussion paper can be downloaded from the BAS's website at http://www.frc.org.uk/bas/publications/consultation.cfm. Anyone wishing to comment on the paper should do so by emailing basmortality@frc.org.uk, or writing to the Director of the BAS.