

What pension scheme deficits?

Robert Clarkson looks at FRS17 and the lessons of behavioural finance.

Almost every day we read about the serious crisis in final salary pension schemes that has been largely brought about by the move to the methodology of FRS17 (and its European twin, IAS19), in which the yield on long-dated AA corporate bonds is the specified discount rate for liabilities, and assets are taken at market value without any smoothing adjustment.

The adverse consequences of this move to FRS17 are numerous and acute:

- 1 Horrendous 'headline' deficits arise even for schemes that were previously thought to be well funded in actuarial terms.
- 2 The size and volatility of these deficits are causing many companies to close their final salary schemes to new entrants or in some cases (eg Rentokil Initial) to existing members.
- 3 The large amounts that companies are having to inject to remove deficits will reduce their ability to finance capital expenditure, and research and development, which will have an adverse impact on future economic growth.
- 4 The move from a high-equity and property content towards LDI (liability-driven investment) schemes involves far lower future investment returns and correspondingly higher continuing costs for companies.

With the notable exception of Simon Carne in his August 2004 SIAS paper 'Being actuarial with the truth', no one in the UK actuarial profession seems to have examined in depth whether FRS17 helps us to 'make financial sense of the future', to quote our profession's motto.

Faithful to the end

Let us invoke traditional actuarial wisdom along the lines of the *ad finem fidelis* (faithful to the end) motto of the Faculty of Actuaries and go back more than a quarter of a millennium to the setting up of the Scottish Ministers' Widows' Fund of 1744, the first actuarially based financial institution in the world. On the basis that a stationary population

would eventually be reached, the eventual contribution income was calculated as £3,940 a year, and the eventual annual outgo was estimated to be £5,946 a year. On the basis of a rate of interest of 4% per annum on the loans that the scheme would invest in, an investment fund of £50,000 would be required to meet the eventual annual shortfall of around £2,000 between contributions and benefits. We can therefore assert that, on the basis of the actuarial assumptions and the investment policy adopted, this scheme was correctly funded on an ongoing basis, with a fund of £50,000 and annual contributions and benefits of £4,000 and £6,000 respectively.

Let us now bring the monetary amounts and investment policy up to date and consider a UK final salary company pension scheme where the contributions and benefits are at the rates of £8m and £12m a year respectively increasing continuously in line with inflation. The market value of the assets is £100m, and investment is 100% in UK equities, which are assumed to return 4% per annum after inflation over the long term as against the 5.2% per annum real return over 106 years from the end of 1899 to the end of 2005 as shown in the Barclays Capital Equity Gilt Study 2006. Ignoring the short-term volatility of UK equity returns (and in this context it is interesting to note that over the ten years to the end of 2005 the average real return was 5.0% per annum despite the dotcom boom and bust), we can similarly assert that this scheme, which in real terms is the exact equivalent of the Scottish Ministers' Widows' Fund stationary population with all monetary amounts multiplied by 2,000, is correctly funded on an ongoing basis.

Let us now examine the effect of a change in the initial annual contribution rate to either £9m or £7m. If all the assumptions (including the 4% per annum real investment return) are met, the fund in real terms (ie pounds sterling value in 2006) will have the future values shown in table 1.

At an initial contribution rate of £9m, the scheme is significantly overfunded on an ongoing basis, whereas at an initial contribution rate of £7m it is significantly underfunded and runs out of assets just after 40 years.

Financial truth

For our correctly funded scheme with an initial contribution rate of £8m, let us now apply the methodology of FRS17, on the basis that the yield on high-grade corporate bonds is 4.5%

Table 1 Effect of a change to the initial annual contribution rate

Contribution rate	Fund in real terms (£m) after period in years:									
	5	10	15	20	25	30	35	40	45	50
£9m	106	112	120	130	143	157	175	197	223	256
£8m	100	100	100	100	100	100	100	100	100	100
£7m	94	88	80	70	57	43	25	3	-	-

and the future inflation rate will be constant at 2% per annum. Then the value of the liabilities is the value at 4.5% of a continuous perpetuity commencing at £4m and increasing at 2% per annum, namely £161m. Since the market value of the assets is £100m, there is an FRS17 deficit of no less than £61m. Even if the scheme had been significantly overfunded with an initial contribution rate of £9m, there would still be an FRS17 deficit of £21m. This is the principal financial truth that I wish to highlight in this article – for a final salary pension scheme which invests largely in real assets such as equities or property and is correctly funded on an ongoing basis on any common sense actuarial basis that ‘makes financial sense of the future’, there will be a horrendous, but totally fictitious, FRS17 deficit that must now be taken into the company’s balance sheet.

But what I see as the most serious threat from FRS17 has still to manifest itself. Suppose that for the correctly funded scheme with an initial contribution rate of £8m the market value of its UK equities after a sharp market rise is £125m rather than its ‘fair value’ recent average of £100m and suppose that we experience a world-wide economic setback that takes the market value of its equities down to £75m. Then, even assuming no reduction in the long-dated AA bond yield from continuing moves to LDI schemes, the FRS17 deficit would soar by £50m and there would be a balance sheet deterioration of the same amount. Similar financial deterioration would occur in all companies with significant equity investment within their pension schemes in all countries where FRS17 principles have been implemented, leading to the very real likelihood of a self-feeding downward spiral in equity markets worldwide from a combination of balance sheet deterioration and panic switching out of equities by companies desperate to stop any further increase in their terrifyingly high FRS17 deficits.

Equity chickens

However, even the immediate and total abandonment of FRS17 would not stop the accelerating demise of UK final salary pension schemes, since UK actuarial practice has moved close to, or even overtaken, the unsound methodology of FRS17. Until about ten years ago, a widely accepted method of valuing the liabilities was to use a hybrid interest rate and expected equity return that reflected the likely investment return on the fund. However, after equity returns had vastly exceeded their long-term averages for an extended period, we had ‘overconfidence’ in the form of recklessly optimistic future rates of equity returns, resulting in ‘contribution holidays’ being commonplace.

This lower funding, combined with the Labour government’s tax raid, which is currently costing around £7bn per annum, left pension schemes vulnerable to even a temporary setback in equity markets. When such a setback arrived after the dotcom bubble, ‘overreaction bias’ took over, causing equities to be seen as having failed. We then had ‘myopic loss aversion’ in the form of the pervasive ‘pension funds are bondlike in nature’ dogma. Finally, in a so-called move towards ‘prudence’ in not repeating the mistake of counting the equity chickens before they were hatched, this ‘overreaction bias’ has led to a great many funding valuations being carried out using discount rates that are based on bond yields. The creation of both the Pensions Regulator and Pension Protection Fund has served to encourage this approach.

These behavioural finance chickens have now come home to roost, to the grave disadvantage of final salary pension scheme members and sponsors. Acute shortsightedness on the parts of the accounting profession, the actuarial profession, and the regulators in not realising that illusory deficits of a terrifying magnitude will arise whenever liabilities are discounted at a rate that is significantly lower than a prudent estimate of the expected long-term investment return has, for many final salary pension schemes, created dangerously misleading values of surplus or – more usually – deficit.

The way backwards

How can we get back to a commonsense actuarial basis for ongoing funding and thereby avert the total, but quite unnecessary, extinction of final salary pension schemes? There are, I believe, two obvious steps required. The first, and less controversial, is to reintroduce an element of smoothing for investment values. My suggestion here is a moving average of market values over a period of around three years. The second step is to allow a realistic – but still prudent – inflation-adjusted rate of return for real assets such as equities and property. For UK equities, the most important real asset class involved, my suggestion is a rate of return 4% per annum above the assumed rate of inflation. This represents a modest, but not excessive, margin of safety below the long-term average rate.

Also, on the basis of a typical dividend yield of around 3% for UK equities and a trend rate of UK economic growth somewhat in excess of 2% per annum, which should translate into real growth in corporate profits and dividends of the same order of magnitude over the long term, this 4% per annum real rate of return can clearly be justified on ‘general reasoning’ grounds. □

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