Report on Mortality Basis in TM1

From the Pensions Board of the Actuarial Profession

Introduction

Under the disclosure requirements for money purchase benefits introduced by the DWP from April 2003, pension scheme trustees or managers are required to produce a projection once a year showing the amount of annuity that an individual's pension fund might buy at retirement. The projection is based on a single set of assumptions that are set out in a document known as Technical Memorandum 1, or TM1 for short. TM1 is produced and maintained by the Actuarial Profession, subject to approval by the Secretary of State for Work and Pensions.

Under the agreed review process, the Actuarial Profession monitors TM1 on an ongoing basis with a view to conducting a formal review once a year or, in exceptional circumstances, recommending an immediate formal review.

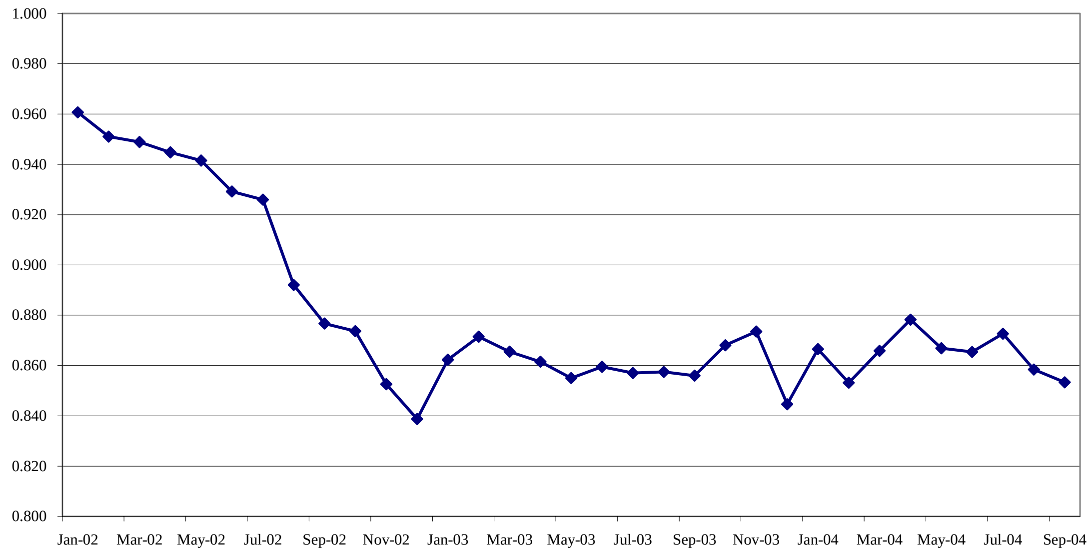
This report has been produced as part of the most recent formal review process and shows that since September 2002, the actual annuity rates for males have been below 88% of the rates produced using the TM1 formula and have averaged around 85% of TM1 rates. Our conclusion is that the TM1 basis needs amending to bring it into line with the market.

Our findings – Male rates

The following graph compares the TM1 basis with the average of the top five market rates available on the first working day of every month from January 2002 to September 2004, for a male aged 65. The sources of the market rates used are Ratetracker from January 2002 to February 2004, and from the Kerr Henderson Bacon & Woodrow Online Annuity Service from March 2004 to September 2004. These have been compared with the annuity rates published by the FSA on their website. There is a small difference observed, with the FSA published rates being more expensive by an average of about 1.1%. This is a result of the Kerr Henderson Bacon & Woodrow rates being nil-commission rates whereas the FSA published rates are inclusive of commission. This report does, therefore, assume that scheme members can take advantage of nil-commission rates, which may or may not be the case. Unlike the previous report, this report does not round interest rates (as required by TM1) as rounding produces distortions if changes to the interest rate used are under consideration.

The graph shows that the current TM1 formula produced annuity rates close to market rates for males at the start of 2002. However, since then, the TM1 formula has understated the market price and by the end of 2002 it was around 15% below market. Market rates have stayed at around the same level since then with the result that TM1 projections are overstating expected pensions by around 15%.

TM1 Annuity Comparisons
Male age 65 with 50% spouse's pension and 5 year guarantee
Purchase price £100,000



Amount of premium

The extent to which market annuity rates vary by size of premium has been examined by considering a single premium of £10,000 instead of £100,000. The average annuity rates for the lower premium are approximately 1% to 3% worse than for a £100,000 premium. So, if the average premium under a TM1 projection were to be less than the £100,000 used in the above calculations, the case for a change is even more marked.

Also, a premium of £1,000,000 (actually £999,999 as data for £1,000,000 was not available) was found to give average annuity rates 1% worse than for a £100,000 premium, and so the same argument applies as for a small premium.

Our findings – Female rates

We do not have available the detailed back history of market rates for females. We have, therefore, considered comparisons at the three dates for which we do have data available. This data has been taken from the FSA online service and relates to females aged 65 with 50% spouse's pensions.

It can be seen that the market rates for females are not as significantly different from the TM1 rates as is the case for males.

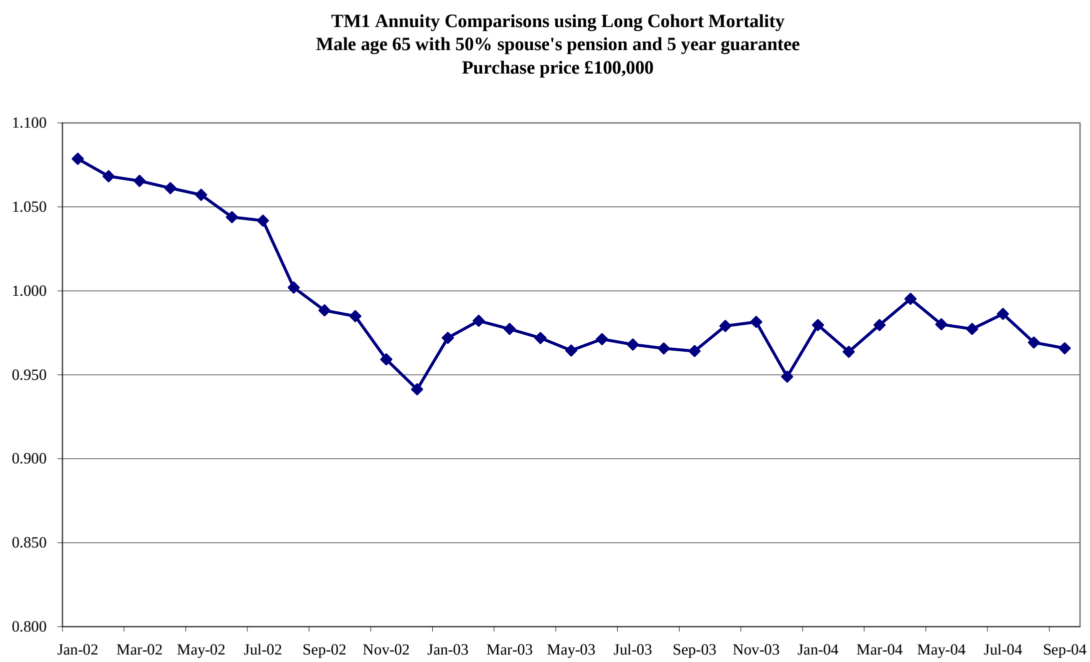
Female rates

Date	Market annuity rate	TM1 annuity rate	Ratio of market rate to TM1 rate
12/1/2004	£4,474 pa	£4,896 pa	91.4%
1/6/2004	£4,418 pa	£4,974 pa	88.8%
6/9/2004	£4,433 pa	£4,911 pa	90.3%

Considerations for a possible change in the TM1 mortality

It is widely heard that most insurance companies offering annuities have moved in recent months to PMA92 and PFA92 tables with one of the cohort projected improvements.

The above male data has, therefore, been reworked using the long cohort projections as the TM1 mortality. The results are shown below.

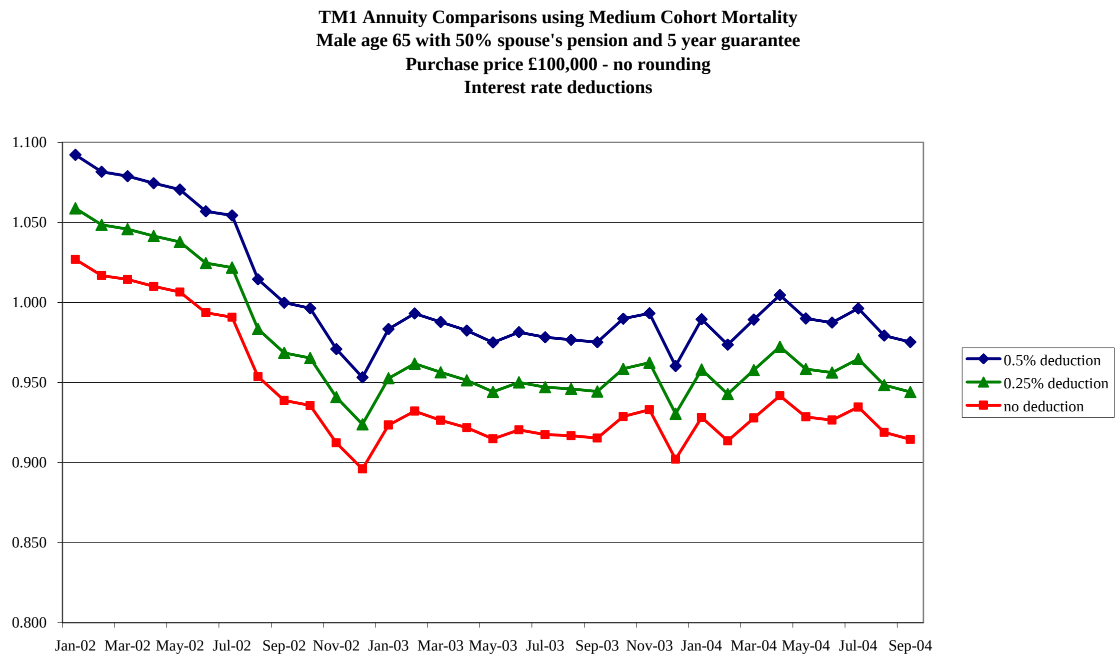


Other considerations

This shows that moving to the long cohort brings the male rates up to between 95% and 100% of market rates.

However, the Actuarial Profession, the DWP and the FSA are agreed that we would want the TM1 basis and the FSA basis used for point of sale projections to remain identical as far as is possible. The FSA would want to move to the same mortality for all types of annuity for point of sale projections, i.e. level, fixed increase and RPI, and a consideration of level annuities and annuities with fixed increases shows that moving to the use of the long cohort would produce annuity prices that were above current market levels.

The above data has, therefore, been reworked using the medium cohort projections as the TM1 mortality with adjustments made to the interest rate as we understand that, in general, market RPI annuity rates are calculated on interest rates that are below yields on index-linked gilts. The results are shown below.



Conclusions

This shows that moving to PMA92 medium cohort mortality together with reducing the interest rate by 0.5% would restore TM1 to approximately market value.

On the limited female data available, moving to PFA medium cohort with a 0.5% reduction in the interest rate would increase the TM1 rates at January, June and September 2004 to 104%, 101% and 103% respectively. Whilst these are slightly above the market rates, they are closer than the current TM1 rates. For the sake of consistency, it would not be unreasonable to make the same change for females as for males.

Recommendation

The Pensions Board recommends that the mortality basis in TM1 should be changed to the PMA92 and PFA92 series with the medium cohort projected improvements together with a 0.5% reduction in the interest rate.

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