



Memorandum

TO: Larry Bruning, chair, Life and Health Actuarial Task Force
FROM: Scott Clafin, chair, Academy/SOA Payout Annuity Project Oversight Group
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DATE: September 21, 2009
SUBJECT: Report on Issues Regarding a New Mortality Table

At the LHATF meeting held in conjunction with the Summer 2009 NAIC National Meeting, the joint American Academy of Actuaries¹/Society of Actuaries Payout Annuity Project Oversight Group (POG) was asked to explore certain questions regarding a new mortality table. Specifically, the POG was asked to study the following three issues: 1) whether a new payout annuity valuation mortality table is needed; 2) whether projections should be included in a valuation mortality table; and 3) whether the size of the payout should be included in a valuation mortality table.

General Approach

The POG reviewed SOA 2000-04 Individual Payout Annuity Experience Report and associated Excel files/pivot tables. This information is available on the Society of Actuaries website, www.society.org. The chart below summarizes the data analyzed.

Data	Refund Period				Grand Total
	Non Refund	Certain	Refund Other	Unknown	
Contracts_Exposed	309,909.3	1,152,104.7	58,049.9	41,466.6	1,561,530.4
Amount_Exposed	\$1,324,263,527	\$5,006,359,834	\$204,210,336	\$99,585,689	\$6,634,419,385
Deaths	15,863.5	46,664.0	3,348.5	3,080.5	68,956.5
Amount of Death Claim	\$47,717,200	\$181,922,509	\$11,527,512	\$3,839,547	\$245,006,767
A/E Ratio by Contract Annuity 2000 Basic Table	112.2%	106.8%	113.0%	116.2%	108.7%
A/E Ratio by Amount Annuity 2000 Basic Table	79.0%	96.6%	105.0%	74.9%	92.5%

In addition to reviewing this data, members of the POG discussed mortality and mortality trends with other mortality experts, such as those who compile Social Security information, and those who work on mortality assumptions in England and Canada.

¹ The American Academy of Actuaries is a 16,000-member professional association whose mission is to serve the public on behalf of the U.S. actuarial profession. The Academy assists public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

1. Issue: Is a new payout annuity valuation mortality table needed?

The first issue that needs to be addressed is whether a new valuation mortality table is needed.

PROS:

- The data in the SOA report cited above indicates that there may not be sufficient margins in the current valuation table for current or recently issued business. Although not true at all amounts and all ages, there were a number of cells where the actual mortality was below the expected mortality. The overall actual/expected ratio was 92.5%, which indicates that the mortality component of reserves overall reserves may be insufficient.
- Mortality, particularly at retirement ages has improved according to a wide variety of sources such as the SOA group annuitant mortality study, the Social Security study, and similar information from the Canadian and UK pension plan studies. If mortality continues to improve, a table without projection factors becomes increasingly obsolete over time.
- The payout annuity market is growing, and can be expected to become more significant in the near future due to demographics, decline in defined benefit pension payouts, and possible tax benefits to annuitants. Therefore, the payout annuities are expected to become a larger percentage of business for certain companies, so it is more important that the reserves levels are reasonable.

CONS:

- Moving to a new mortality table will cost the company in terms of updating the valuation system.
- Companies will likely need to re-price their settlement option rates in their life and annuity contracts, and may need to re-file these contracts.

Conclusion: The POG recommends that a new mortality table be developed.

2. Should projections be included in valuation mortality?

The second issue is whether there should be built-in mortality improvement factors included in the valuation mortality.

PROs:

- If a projection factor was not included, the margins needed in the valuation mortality table at inception would likely be higher. Including projections would avoid creating an overly conservative standard at inception.
- Since the trend has been for mortality improvements, using projection factors would keep the table up-to-date.
- If the projections are an integral (mandatory) part of the valuation mortality, this may facilitate the tax deductibility for the total reserves.
- The group annuity table has had projection factors for a number of years, therefore implementation of projection factors on the individual annuity side may not be onerous for companies.

CONS:

- Projection factors add complexity to the valuation mortality calculations, and may require additional programming of certain valuation systems.

- If the projection factors are included in settlement options, this adds complexity to the policies and contracts given to consumers.

Conclusion: The POG recommends that a new valuation table should provide an automatic “update” to account for the continuing secular improvement in mortality.

3. Should payout size be included in valuation mortality?

The SOA study showed that there were noticeable differences in mortality between smaller payouts and larger amounts. The question is whether there should be tiering of the valuation mortality rates by size.

PROs:

- There are substantial differences in mortality by size. The SOA tables show that the overall mortality for the under \$2,500 annual income group to have a 111.3% actual/expected ratio based on the 2000a mortality table, while the over \$50,000 income group had an overall A/E ratio of 70.8%. Tiering would best reflect expected mortality.
- If a company specialized in a specific market, e.g., smaller payouts, a tiered valuation mortality would likely be more reflective of the mortality it would experience.

CONs:

- A tiered valuation mortality table would be difficult to implement and administer.
- A tiered valuation system could be circumvented by judicious splitting of payouts by purchasers as the pricing reflects the additional reserves.
- Currently, the majority of payout annuities offer a refund of various types (e.g., Life with 10 years of certain payouts). The reduced mortality/payout size correlation is considerably less pronounced for these contracts.

Conclusion: The POG recommends tiering of the valuation mortality not be pursued, due to the practical obstacles identified above.

The POG looks forward to discussing these matters with LHATF. If requested, the POG will proceed in developing a valuation table for payout annuities.