SOCIETY OF ACTUARIES

Article from:

Pension Section News

January 2006 – Issue No. 60

An Overview of Retiree Health Aging Curves

by Jeff Petertil

The July 2005 issue of the *North American Actuarial Journal (NAAJ)* published my paper entitled, "Aging Curves for Health Care Costs in Retirement." The paper was based on peer-reviewed research sponsored by the Health Section. Many actuaries involved with retiree health actuarial models will look to the article for numerical factors to reflect morbidity increases as retirees grow older. Such factors combine to form an aging curve and have become an essential part of long-term retiree health cost and utilization projections. Although health actuaries at larger benefits consulting firms have access to some substantial databases and may have analyzed those to develop their own aging factors, many other actuaries have been relying on anecdotal sources. Aging curves have gained a new significance with the Governmental Accounting Standards Board's accounting rules and with the actuarial equivalence provisions of the Medicare prescription drug law.

As the author, I want to offer a few precautionary principles, as well as relieve some of you of the burden of reading through the entire paper. While the goal of the paper is reflected in its title, the length of the paper reflects my conclusion that a number of complicated issues need discussion. Most of those issues had not been subject to published discussion recently, if ever. The paper was an opportunity to explore and document sources. It had become clear to me, in the research leading up to the paper, that the aging curve is quite dynamic. Actuaries will need to continue researching these issues. An immediate answer to the question became less important than structuring the framework of the question.

Although I suggested an "answer" in the paper, I also emphasized the variety of circumstances under which a different aging curve answer might be more appropriate. On page 40 of the July 2005 issue of the *NAAJ* is an aging curve, with a single age-to-age factor set out for each of the five-year age bands from age 50 to age 90. Flatter than a single geometric curve, this "representative" curve is made up of small geometric curves for each five-year band. The highest band is 4.2 percent from age to age; the lowest is 0.5 percent age to age at the oldest age band. This curve was derived from and representative of a 2002 survey of actuaries who work in the area of retiree health benefits. The basis of the curve is explained, but it is noted that, "a close fit to the survey answers … does not make the curve a good fit for any one particular situation. Indeed, it may not be a good fit to any situation …." Notwithstanding that last cautionary comment, I do believe the representative curve is an appropriate fit for many of the retiree health valuations of the next several years and maybe many years beyond. The actuary who uses that or any curve, however, is encouraged to read carefully the caveats in the paper and consider the circumstances of their use of any curve.

Some historical and personal background may help flesh out my concerns. When, 20-plus years ago, I was first asked to value a retiree health benefit plan, I was given no guidelines. The consulting firm where I worked had many pension specialists among its actuaries, all of whom were quite busy in the years after the passage of ERISA, whereas I was a health insurance actuary who seemed to have time on his hands. An actuary who understood the pension valuation system (I did not) would project the participant census over the lifetime of all those eligible. I was to determine an annual per capita cost that would be the starting point for an increasing annuity inflated over the retirees' lives, as well as review valuation results and write a report.

Politics or Actuarial Science?

The period between 1984-1998 is politically significant. The year 1984 represents the start of a resourceful drive fostered by the Heritage Foundation and the Cato Institute, explicitly intended to build up a privatized system of individual investment accounts to replace Social Security. These groups knew the deficits could be manipulated actuarially, that the trustees had the power to do this, and the cooperation of the actuaries would be needed.

After an acute political embarrassment to the Reagan Administration following a brash attempt in the early 1980s to sharply cut early retirement benefits, including those already in payment status, it appears the decision was made to blacken Social Security's eye financially by gradually raising the deficit over a period of many years so as to attract little notice. The drive peaked in 1994 when the Social Security Advisory Council came into being, a prime topic being privatization.

In reading through the trustees' reports, I found no satisfactory explanation for the plunging deficit phenomenon. I also don't recall hearing the chief actuary or a deputy ever dispute blatant assertions that the system was going kaput, or any explanation that the projections were subject to too great an error to be relied on, or advise the public that a 2 percent deficit should not even be regarded as significant over 75 years.[2]

Finally, in the process of accommodating the trustees, the chief actuary has apparently violated two actuarial standards of practice published by the American Academy of Actuaries. My 1999analysis of the Gross Domestic Product (GDP) economic assumptions revealed a failure to take into account either substantial past or recent experience, thus giving the trustees carte blanche to set the level wherever desired. The average future GDP chosen by them was less than half of the long-term actual average (3.3 percent vs. 1.5 percent), and served to make Social Security future finances look dismal indeed.[2]

Secondly, the chief actuary has consistently failed to report as required in his actuarial certification at the end of the trustees' reports, the influence and input of the trustees. Readers can easily err in believing that the chief actuary has total professional control.

It is reasonable to conclude the trustees had the motive and the means and ran with the opportunity to worry the public about the financial health of Social Security. True trustees they are not. Unfortunately, the reputation of the actuarial profession is involved. ◆

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[2] See my 1999 *Contingencies* article analysis on my Web site at *www.davidlanger.com*, "Social Securities Finances are in Fine Shape."

a valuation several times. Actuaries with a solid basis for their current aging factors will find the paper to be a reminder that there are other opinions, there are important variances by medical services, and there are dynamics driving changes in the relative values between ages. It might also encourage them to share their own findings through publication. For instance, there are now many actuaries interested in the aging curve for primary and secondary prescription drug coverage. Is this an appropriate area for practice section research?

In the larger world there are also implications. In the United States and other developed countries, the population is gradually but inevitably becoming older. A health cost aging curve such as those discussed in the paper implies that, due to the older average population, spending for medical goods and services will increase as a portion of national expenditure, crowding out other needs. This seems to have been the case in at least the last 30 years. While productivity gains in the economy have taken care of some needs, there is a significant portion of the population for whom medical care has become a substantial economic problem. Much of this is due to demand and supply variables that may be separate from the aging effect. Nonetheless, it is worth considering that if the aging curve is not static but sufficiently dynamic, there is a greater chance that the efforts at health care cost control—that many of us have been involved with—will be successful. ◆

Based on the research mentioned above, The SOA Health Section is sponsoring a webcast based on Jeff's research. The webcast is scheduled February 15, 2006, for complete details go to http://www.soa.org/ccm/content/?categoryID=33504.

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