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Chapter Authors: Warren C. Sanderson

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Comment

Warren C. Sanderson

The Shoven and Goda chapter is a positive one, as opposed to a normative one. It tells us how to adjust ages for increases in life expectancy and tells us what the ages represented in Social Security, Medicare, and Individual Retirement Accounts (IRA) would be if the ages in those programs were adjusted for life expectancy change starting from the date that the program began and from the current date. This chapter almost begs for a companion paper, this time a normative one. Given that we know these ages, what should we do with them? The title indicates what the authors think. They think that we should be "adjusting government policies for age inflation." But should we use the ages computed in this chapter to do the adjustment or should we do it differently? This is the basic tension in this article. We are given a tool and not told what to do with it or how to use it.

My comments are organized under five headings:

1. Some history of new age thinking.
2. New age thinking in this chapter.
3. Applications of new age thinking here.
4. New age thinking applied in new ways.
5. Terminological problems with "age inflation" and "real age."

Some History of New Age Thinking

Shoven (2007) introduced the term "new age thinking" and I like it very much. It refers simultaneously to new thinking about age and to thinking about what some people are calling a new age segment, the time after retirement but before the ravages of old age become severe enough to seriously reduce the quality of life. The phrase new age thinking is not used in the chapter. Perhaps one reason for this is that, as the authors understand, their thinking about age is not exactly new.

Compare, for example, the quotation from (Steuerle and Spiro 1999) with one in the current chapter:

> If, in studies of the economy, past and present currencies are made equivalent by adjusting dollars for inflation, why shouldn't age be adjusted for

Warren C. Sanderson is professor and cochair of economics at Stony Brook University.

> life expectancy in labor force studies of the elderly? Today's sixty-five-year-olds can expect to live longer than they did in the past and, in this sense, are younger than sixty-five-year-olds were sixty years ago. In 1997, men turning sixty-five could anticipate another sixteen years of life; in 1940, men who could expect to live this long were sixty years old. While there is no perfect way to make past and present ages equivalent, given the comparability between the life expectancies of sixty-five-year-olds today and sixty-year-olds in 1940 (and assuming that equivalent life expectancy indicates a similar ability to work), studies of labor force participation that contrast the two may offer details not apparent in the traditional chronological measure. (1)

> It is commonly agreed upon that government programs such as tax systems, welfare programs, and retirement programs must adjust for price inflation to account for the fact that a fixed amount of dollars can buy items of different values from one time period to the next. Few would argue that a $10,000 income in 1970 is the same in real terms as a $10,000 income in 2008, and most government programs explicitly take this difference into account. In fact, the year-to-year adjustments that are needed to keep systems in line with their initial intentions are often automatic. When comparing U.S. economic statistics for different time periods, economists and policy analysts state the figures in "real dollars" or "dollars of constant purchasing power" rather than using unadjusted nominal dollars. Just like a dollar in 1950 is not the same unit as a dollar in 2008, we argue that a year of age or a year since birth is not a constant unit of age. (Shoven and Goda, chapter 4, this volume)

Indeed, new age thinking has a reasonably long pedigree. I do not know when the idea of adjusting Social Security for increases in life expectancy was first broached, but more academic studies of adjusting age for life expectancy change goes back at least to Ryder (1975). There, Ryder suggested that old age should not be considered to start at age sixty-five, but rather at some age associated with a fixed remaining life expectancy. Ryder suggested people in age groups with remaining life expectancies of ten years or less be considered old. Method 1 (in this chapter), for adjusting ages for changes in life expectancy is a natural extension of this idea.

Fuchs (1984) was the first person to see the formal equivalence of adjustment of nominal quantities for price change and the adjustment of age for life expectancy change. He followed the standard economic nomenclature and called conventional age "nominal age" and age, after the adjustment for life expectancy change, "real age." People of the same real age had the same remaining life expectancy. People of the same nominal age had lived the same number of years.

The insights of Ryder and Fuchs went undeveloped. They were sporadically reinvented as illustrated by the quotation from Steuerle and Spiro (1999) earlier. In Sanderson and Scherbov (2005) we independently reinvented the concept of age based on remaining life expectancy yet again. This

is method 1 in the chapter. We now call this age "prospective age" in order to emphasize that it is a forward-looking measure as opposed to conventional or retrospective age, which is a backward-looking measure. I will discuss later why I think that the term prospective age is preferable to real age.

We applied the concept of prospective age to the demographic histories and forecasts for Germany, Japan, and the United States. We showed that there were historical periods or likely future periods where the countries exhibit aging as measured by increases in the conventional median age and simultaneously increased youthfulness as measured by decreases in their prospective median ages. In addition, we did calculations there equivalent to method three in the current chapter.

Three papers (written by Sanderson and Scherbov [2007a, 2007b] and Lutz, Sanderson, and Scherbov [2008]) have now come out that deepen our understanding not only of prospective age, but also other ways of adjusting age for life expectancy change; more papers are in the works. Shoven and Goba understand that their contributions here are not conceptually original. The contribution of their chapter is in the actual calculations that they make for important government programs.

New Age Thinking in This Chapter

The chapter suggests four methods for adjusting age for life expectancy change:

1. Remaining life expectancy is matched.
2. Mortality risk is matched.
3. Percentage of life expectancy at birth is matched.
4. Percentage of remaining life expectancy at twenty is matched.

In concept, adjusting the age at receipt of a full Social Security pension or at the onset of Medicare coverage using method one is utility-reducing. Tables 4.1, 4.2, and 4.3 in the chapter show that the ages produced by methods two, three, and four are even higher than those produced by method one, and therefore reduce utility even more. I will address why method one reduces utility in the next section.

Even putting aside the problem of utility-reducing reforms, I do not see the rationale for methods two, three, and four. For Social Security and Medicare the periods of pay-in and pay-out are relevant. Method one is clearly more appropriate in that case. I see no reason why method two would be used. Moreover, mortality risks are less stable than life expectancies, and so adjusting for them would make for more noisy policies. Method four seems to have some merit, but we need to remember that life expectancy at age twenty has increased faster than life expectancy at older ages. Life expectancy at the age computed using method four actually decreases as life expectancy at twenty increases. From my perspective, only method one should be used in policy reform discussions. The other three are interesting

in a pedagogical sense because they show concretely why they should not be used.

Two base years are considered:

1. The year the program was introduced.
2. The current year.

Using the year the program was introduced is illustrative, but not very useful. They show that if we were to adjust the ages in the public programs for life expectancy changes starting from the year of program initiation, we would have to make large discontinuous changes in those programs today. This teaches us why we would not want to use ages adjusted for life expectancy changes computed from the beginning of the program forward. When we use the program's introduction date as the base year, we might be subtly introducing the notion that the policymakers at that time really had a life expectancy-adjusted age in mind, and that being true to their programs would require large discontinuous changes in ages. Alternatively, we can think that subsequent policymakers, by keeping the ages in the programs constant, were also making a statement about policy. I do not see a public policy rationale for favoring the views of one group of decision makers over another. In terms of the continuity of policy, it is certainly best to view age changes based on current policies.

This chapter is a positive one. It does not provide policy prescriptions. From a policy perspective, however, only one of the eight figures is useful—method one, starting from current conditions.

Applications of New Age Thinking Here

The eight computations are applied to the Social Security program, Medicare, and Individual Retirement Accounts. These applications are interesting from a policy viewpoint, but incomplete. The main problem with them is that all of them are utility-reducing. Let us take a simplified Social Security system as an example. When normal pension ages, Social Security tax rates, and benefit payments are fixed, each generation pays into the system for a fixed number of years, but, as life expectancies rise, each generation gets a longer and longer period of payout. Each generation gets a better deal from the Social Security system, but the risk is that the system could go bankrupt. Alternatively, when life expectancies at the normal pension age are fixed, along with Social Security tax rates and benefit payments, each generation has a reduced utility from the pension system. This is because there is an ever increasing length of the pay-in period and a fixed average length of the pay-out period. This is exactly what happens with Shoven and Goba's method one. Successive generations get lower and lower utility from the Social Security system.

Social Security and Medicare reforms based on all the methods presented in this chapter are utility-reducing. This is the most important problem with

the chapter. As a strictly positive contribution, the authors can calculate whatever they wish. On the other hand, our interest in the chapter depends on how relevant the numbers are. If we would never wish to employ any of the methods because they reduce the utility of successive generations, then how intriguing are these numbers? Would it not be better to provide numbers that we might possibly use in policy discussions?

New Age Thinking Applied in New Ways

If none of the methods offered in the chapter are useful for policy analysis, then should we give up on new age thinking? The answer is certainly no, but to justify it, I need to demonstrate how new age thinking can be used in the policy debate.

The normal pension age is now undergoing a phase of rapid increase. People born in 1937 had a normal pension age of sixty-five. That age rises by two months per year through people born in 1943, who can receive a normal pension at age sixty-six. This is followed by a pause in the increase through the cohort of 1954. Next comes another phase of rapid increase by two months per year until the normal pension age becomes constant at sixty-seven for those born in 1960 and beyond. There is little rhyme or reason to this stair-step pattern. The fixed normal pension age of sixty-seven eventually leads to the bankruptcy of the Social Security system around 2042. Method one, on the other hand, would lead to a more rapid and continuous rise in the normal pension age, and would be progressively utility-reducing. Is there not some middle ground?

A rough projection based on the rates of changes of life expectancies at older ages experienced in the United States in the last half century suggests such a middle ground. A Social Security reform that would increase the normal pension age by half a year for every additional year of life expectancy at age sixty-five would quite closely approximate the current situation up to the cohort of 1960, and then produce a steady upward movement in the normal pension age. This is not the place to discuss the benefits and drawbacks of this reform. It is just important to notice that it can be relatively easily implemented because it does not cause discontinuities in normal pension ages, it uses new age thinking, and it does not involve any of the four methods suggested in this chapter.

Clearly, new age thinking can be a useful tool in policy dialogue regarding U.S. entitlement programs. I think that a bit more orientation in this chapter toward potentially useful reforms would have made it more exciting.

Terminological Problems with Age Inflation and Real Age

I think that the terms age inflation and real age as used in this chapter will be confusing to many noneconomists and that they should not be used. In order to assess the reactions of noneconomists to the terms, I shared the Shoven and Goda paper with Wolfgang Lutz. He is one of the foremost

demographers of his generation, a colleague, and a frequent coauthor. Here is what he wrote:

> While the comparison to inflation is understandable with respect to the need for some adjustment of existing systems, it seems to be flawed under different perspectives and overall I think it is inappropriate.

What followed this quotation was an analysis of why it was inappropriate. Rather than reproduce that here, I will combine some of his ideas with mine and hope that the mixture is coherent. When we do inflation adjustment for monetary aggregates such as gross domestic product (GDP) and personal income, we recognize that the underlying unit of measure, say dollars, is getting less valuable over time because of price increases. Because of this, we need more dollars after inflation to buy the same bundle of goods. When we talk about age inflation, what is becoming devalued? The unit of measure of age is years. So, by analogy, the value of additional years must be going down as life expectancy rises. To have the same number of "effective" years, we would need to have more of them. However, to get more future years, we would need a lower real age, not a higher one. This seems to lead to a contradiction. Age inflation seems to imply lower ages over time, not higher ones.

Even putting this apparent contradiction aside, the argument by analogy seems to have problems. Why should the value of my sixty-fifth-year, for example, be lower to me when my life expectancy was eighty-six than it would be when my life expectancy was eighty-five? There are answers to all these issues. They begin by realizing that the premise of the previous argument is wrong. Age inflation does not mean that anything is really inflated. Age inflation is technically time deflation. As life expectancies at older ages increase, the number of years ahead of us, at any fixed age, increases. This is analogous to price decreases that increase the value of the money that we have. To compensate for having more years ahead of us, we have to take away some years. This is done by increasing the real age. Thus age inflation is due to a form of time deflation.

Most people will be frustrated and confused with this argument. The terms age inflation and time deflation as well as the murky concept of revaluing years will hinder our discussion of important aspects of new age thinking, not enhance it.

What about the term real age? Does it make our discussions of new age thinking any easier? I do not think so. There is already a term for this in the literature. It is prospective age. The term prospective age has the advantage that it does not immediately lead us back to the quandary of age inflation. There is also another problem with the term real age. Not all aspects of life should be analyzed in life expectancy-adjusted terms. The fecundity of a thirty-five-year-old woman in 2000 was not that different from the fecundity of a thirty-five-year-old woman in 1900, despite the increase in life expec-

tancy. It is better to think of age as having two components: retrospective or conventional age, and prospective age. The different components could have different weights in answering different questions.

Communicating concepts involving the adjustment of age for life expectancy change to nontechnical audiences is a difficult challenge, but it is a challenge that we must overcome if we are to make those concepts part of the policy debate. For this reason, we must be careful in our choice of expressions. In my opinion, the terms age inflation and real age will only muddle the discussion and therefore we should stay away from them.

The Shoven and Goda chapter is a good one. It shows us what some ages in important public programs would be if they were adjusted for increases in survival rates at older ages. The chapter virtually demands a companion piece saying what should be done with the ages that were computed here. The current chapter would have been even better if the authors had had this companion paper in mind while they were writing this one.

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