

It's time to measure 21st century aging with 21st century tools

March 4 2016, by Warren Sanderson And Sergei Scherbov



How facts from the census questionnaire were tabulated into statistics in 1950.
Credit: The U.S. National Archives/Flickr

The populations of most countries of the world are aging, prompting a deluge of news stories about [slower economic growth](#), [reduced labor force participation](#), looming [pension crises](#), exploding health care costs and the [reduced productivity](#) and cognitive functioning of the elderly.

These stories are dire, in part because the most widely used measure of aging – [the old-age dependency ratio](#), which measures the number of older dependents relative to working-age people – was developed a century ago and implies the consequences of aging will be much worse than they are likely to be. On top of that, this ratio is used in political and economic discussions of topics such as [health care](#) costs and the pension burden – things it was not designed to address.

Turning 65 in 2016 doesn't mean the same thing as hitting 65 in 1916. So instead of relying on the old-age dependency ratio to figure out the impact of aging, [we propose using a series of new measures](#) that take changes in life expectancy, labor participation and health spending into account. When you take these new realities into account, the picture looks a lot brighter.

Our tools to measure aging have aged

The most commonly used measure of population aging is the "old-age dependency ratio," which is the ratio of the number of people 65 years or older to those 20 to 64.

But, since the old-age dependency ratio was introduced in the early 1900s, most countries have experienced a century of rising life expectancy, and further increases are anticipated.

For instance, in 1914, life expectancy at birth in Sweden was 58.2 years (average for both sexes). By 2014, it had risen to [82.2 years](#). In 1935, when the U.S Social Security Act was signed into law, 65-year-olds were

expected to live 12.7 more years, on average. In 2013, 65 year-olds may expect to live [19.5 years more](#).

But these changes aren't reflected in the conventional statistics on aging. Nor is the fact that many people don't just stop working when they turn 65, and that people are staying healthier for longer.

To get a better sense of what population aging really means today, we decided to develop [a new set of measures](#) that take these new realities into account to replace the old-age dependency ratio. And instead of one ratio, we created several ratios to evaluate health care costs, [labor force](#) participation and pensions.

Who retires at 65 anymore?

One of these new realities is that the number of people working into their late 60's and beyond is going up. In 1994, 26.8 percent of American men aged 65-69 participated in the labor force. That figure climbed to 36.1 percent in 2014 and is forecast to reach [40 percent by 2024](#). And the trend is similar for even older men, with [17 percent](#) of those aged 75-79 expected to still be working in a decade, up from just 10 percent in 1994.

Clearly, these older people did not get the message that they were supposed to become old-age dependents when they turned 65.

This isn't unique to the U.S. Rates like these in many countries [have been rising](#). In the U.K., for instance, the labor force participation rate of 65- to 69-year-old men was 24.2 percent in 2014, and in Israel it was 50.2 percent, up from 14.8 percent and 27.4 percent, respectively, in 2000. In part this is because older people now often have better cognitive functioning than their counterparts who [were born a decade earlier](#).

So, instead of assuming that people work only from ages 20 to 64 and become old-age dependents when they hit 65, we have computed "economic dependency ratios" that take into account observations and forecasts of labor force participation rates. This tells us how many adults not in the labor force there are for every adult in the labor force, giving us a more accurate picture than using 65 as a cutoff point. We used forecasts produced by the [International Labour Organization](#) to figure this out.

The old-age dependency ratio in the U.S. is forecast to increase by [61 percent](#) from 2013 to 2030. But using our economic dependency ratio, the ratio of adults in the labor force to adults not in the labor force increases by just 3 percent over that period.

Clearly, doom and gloom stories about U.S. workers having to support so many more nonworkers in the future may need to be reconsidered.

Is the health care burden going to be so high?

Another reality is that while health care costs will go up with an older population, they won't rise as much as traditional forecasts estimate.

Instead of assuming that health care costs rise dramatically on people's 65th birthdays, as the old-age dependency ratio implicitly does, we have produced an indicator that takes into account the fact that most of the health care costs of the elderly are incurred [in their last few years of life](#). Increasing life expectancy means those final few years happen at ever later ages.

In Japan, for example, when the burden of the health care costs of people aged 65 and up on those 20-64 years old is assessed using only the conventional old-age dependency ratio, that burden is forecast to increase [32 percent](#) from 2013 to 2030. When we compute [health care](#)

[costs](#) based on whether people are in the last few years of their lives, the burden increases only 14 percent.

Pension ages are going up

The last reality we considered concerns pensions.

In most OECD countries, the age at which someone can begin collecting a full public pension is rising. In a number of countries, such as Sweden, Norway and Italy, pension payouts are now explicitly [linked to life expectancy](#).

In Germany, the full pension age will rise from [65 to 67 in 2029](#). In the U.S., it used to be 65, is now 66 and will soon [rise to 67](#).

Instead of assuming that everyone receives a full public pension at age 65, which is what the old-age dependency ratio implicitly does, we have computed a more realistic ratio, called the pension cost dependency ratio, that incorporates a general relationship between increases in life expectancy and the pension age. The pension cost dependency ratio shows how fast the burden of paying public pensions is likely to grow.

For instance, in Germany, the old-age dependency ratio is forecast to rise by [49 percent from 2013 to 2030](#), but 65-year-old Germans will not be eligible for a full pension in 2030. Our pension cost dependency ratio increases by 26 percent over the same period. Instead of indicating that younger Germans will have to pay 49 percent more to support pensioners in 2030 compared to what they paid in 2013, taking planned increases in the full pension age into account, we see that the increase is 26 percent.

Sixty-five just isn't that old anymore

In addition to this suite of measures focused on particular aspects of population aging, it is also useful to have a general measure of population aging. We call our general measure of population aging the prospective old-age dependency ratio.

People do not suddenly become old-age dependents on their 65th birthdays. From a population perspective, it makes more sense to classify people as being old when they are getting near the end of their lives. Failing to adjust who is categorized as old based on the changing characteristics of people and their longevity can make aging seem faster than it will be.

In our prospective old-age dependency ratio, we define people as old when they are in age groups where the remaining life expectancy is 15 years or less. As life expectancy increases, this threshold of old age increases.

In the U.K., for instance, the conventional old-age dependency ratio is forecast to increase [by 33 percent by 2030](#). But when we allow the old-age threshold to change with increasing life expectancy, the resulting ratio increases by just 13 percent.

Populations are aging in many countries, but the conventional old-age dependency ratio makes the impact seem worse than it will be. Fortunately, better measures that do not exaggerate the effects of aging are now just a [click away](#).

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