Longer lives, later retirement. But how much later?

Populations are ageing, and retirement ages are rising in many countries. But how should retirement ages respond to increases in life expectancy? Should an additional year of life mean an additional year of work? Denmark has effectively chosen this approach, making it an especially interesting case study. In recent analyses, my co-authors and I show that such a system favours present generations over future ones, as future generations will spend a significantly smaller share of their lives in retirement. A generation-neutral system would still require substantial increases in the retirement age, but at a less aggressive pace. As the choice of how closely to link retirement age to longevity has important consequences for public finances, our analysis of Denmark offers a useful lesson for other ageing societies.

Ageing populations are putting pension systems under pressure across the developed world. The basic problem is well known: We live longer, but if retirement ages remain unchanged, we spend more years receiving pensions, while the number of working years does not increase correspondingly. Public pension expenditures rise and the tax base shrinks relative to the number of retirees.

Countries are responding in different ways. Some raise the retirement age through one-off political decisions. Others have introduced more or less automatic links between longevity and retirement ages. Denmark belongs to the latter group. It has chosen one of the most aggressive versions. Basically, since 2006, it follows a one-to-one principle: when life expectancy increases by one year, retirement age increases by one year.

Denmark's retirement age is currently 67. Last year, the Danish parliament decided to raise it to 70 by 2040. As this is the highest statutory retirement age in the world, the decision attracted considerable international attention. This triggered my writing finger, so I explained the reasoning behind this decision and the mechanism driving Denmark's steadily rising retirement age in a post (link).

Aiming to link retirement age to life expectancy has done wonders for Denmark's public finances. Danish fiscal policy is not merely sustainable. It is *over-sustainable*, at around 1% of GDP. In round numbers, this means that taxes could permanently be reduced, or public expenditure permanently increased, by 1% of GDP every year going forward without jeopardising long-run public finances.

This sounds almost too good to be true. And to some extent, it is. Together with pension experts Henrik Ramlau-Hansen (a former CEO of the then-largest Danish pension fund Danica and now Associate Professor at CBS) and Per Bremer Rasmussen (a former CEO of the industry association Insurance & Pension Denmark), we looked more closely at one of the crucial assumptions behind these calculations: the future retirement age.

The lesson, as I will explain in this post, is that there is an important question hiding behind this apparently sensible principle: If we gain one additional year of expected life, should the entire year become an additional year of work? Or should some of our longer expected lives also become longer expected retirements?

Our analysis, published in the Danish journal Finans/Invest right before summer (link),

received considerable attention in major Danish newspapers (link, link). Because the underlying calculations and their implications extend well beyond Denmark, I discuss the main conclusions here and the lessons they may hold for other countries.

From 67 to 77

As mentioned, the Danish retirement age is currently 67 and has already been legislated to reach 70 in 2040. Given current longevity projections, and if the one-for-one policy continues, it implies a retirement age of 77 in 2100.

Think about that number for a moment. Over approximately three generations, the Danish retirement age would increase by ten years, from 67 to 77.

While most people probably would agree that some increase in the retirement age is sensible when we live longer, the much more difficult question is: How much?

Who gets the extra years of life?

Suppose longevity increases by one year. There are several ways we could divide this extra year.

One possibility is that the entire additional year becomes an additional year of work. This is essentially the logic of the current Danish system.

Another possibility is that the entire year becomes an additional year of retirement. This is effectively what happens in the long run if the retirement age is fixed.

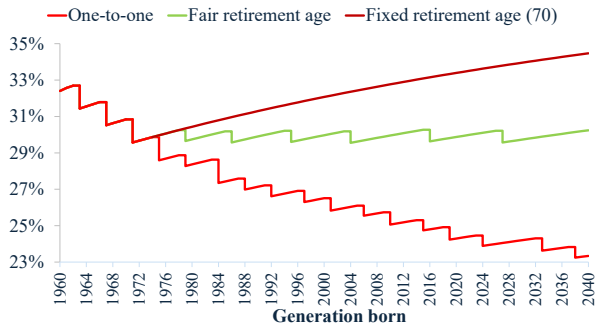
Neither strikes us as obviously fair. Instead, consider a simple principle:

Future generations should be allowed to spend approximately the same share of their adult lives in retirement as current generations.

Henrik, Per and I did the math. For the generation retiring at age 70 around 2040, i.e., the generation born around 1970 (my generation, by the way), expected remaining lifetime is approximately 19 years. If we define adult life as beginning at age 25, this generation can expect to spend roughly 30% of its adult life in retirement.

What happens to that share if the retirement age continues to increase one-to-one with projected life expectancy? It falls. And it falls substantially, as Figure 1 shows.

Figure 1. *Share of adult life spent in retirement under a one-to-one link between life expectancy and retirement age, a fixed retirement age of 70, and a fair retirement system for generations born in different years.*
Source: Ramlau-Hansen, Rangvid, and Rasmussen (2026), henceforth RRR (2026).



One often hears that the Danish system is reasonable because younger generations live longer and therefore can work longer. But this misses something important.

Under the current system, younger generations do not merely work more years because they live longer. They work a larger

fraction of their lives. That is a very different proposition.

Figure 1 illustrates the point clearly. If raising the retirement age one-to-one with life expectancy, the share of adult life spent in retirement declines from above 30% for today's generations to around 23% for generations retiring in 2100. Under the fair-retirement-age proposal that I describe below, it remains around 30%.

A fair retirement age

We propose a different principle. Take the generation that retires at 70 in 2041 as the benchmark. Our idea for a fair retirement system is that future generations should have approximately the same share of their adult lives in retirement.

When we apply projected cohort life expectancies from the Danish DREAM group – an independent governmental institution that analyse Denmark's long-term economy, demographics, public finances, and economic policies – we find that the retirement age would increase to 71 around 2057, instead of increasing to 71 already in 2046 that a one-to-one rule implies. Age 72 would arrive around 2076. And age 73 around 2100, compared to the aforementioned age 77 implied by the one-to-one rule.

So we are emphatically not proposing to freeze the retirement age. People will live longer, so they should work longer. But not every additional month of life should automatically become an additional month of work.

It turns out that our calculations imply a remarkably simple approximate rule: For every additional year of life, work nine months longer and spend three months more in retirement.

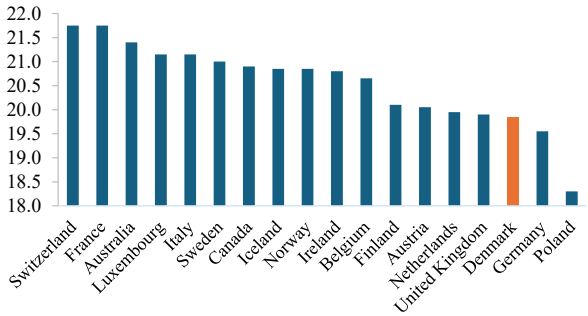
In other words, roughly 75% of increases in longevity should translate into longer working lives and 25% into longer retirement. I find this a useful way of thinking about retirement policy.

Denmark is an international outlier

Perhaps Denmark needs a retirement age of 77 (in 2100) because Danes live exceptionally long? No. The opposite is closer to the truth.

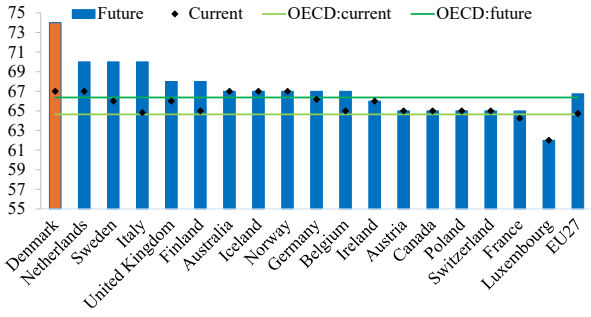
The international comparison in our paper is striking. Among the countries we consider, Denmark is towards the lower end when it comes to remaining life expectancy at age 65, as Figure 2 shows. Yet Denmark has the highest projected future retirement age, as Figure 3 shows.

Figure 2. *Life expectancy at 65 (number of years), average men and women.*
Source: OECD and RRR (2026).



The juxtaposition is powerful: relatively modest Danish longevity alongside an exceptionally high future retirement age.

Figure 3. Current and future retirement ages. Source: OECD and RRR (2026).



Denmark is not alone in linking retirement ages to longevity. Estonia, Greece and Italy also have a one-to-one relationship. Other countries have chosen a less aggressive mechanism. In Finland, the Netherlands and Portugal—and in Sweden from 2026—the relationship is approximately two-thirds: if longevity increases by one year, the retirement age increases by around eight months.

These differences demonstrate that linking retirement ages to longevity does not mechanically imply that retirement ages must increase one-for-one. There is a policy choice involved regarding a fair treatment of current versus future generations.

What can other countries learn from Denmark?

This, I think, is where the Danish experience becomes particularly relevant internationally.

Longevity indexation has considerable advantages. It reduces the need for repeated—and politically difficult—decisions about retirement ages. It also helps protect public finances as populations age. But the indexation factor matters enormously.

A one-to-one link between longevity and retirement ages means that essentially all future gains in longevity are allocated to working life. A lower indexation factor divides those gains between additional work and additional retirement.

This is not merely a technical parameter buried somewhere in a pension formula. It is an implicit decision about how the benefits of increasing longevity are distributed across generations. Countries considering longevity indexation should therefore ask two questions rather than one.

The first is the familiar one:

Will the pension system remain financially sustainable as people live longer?

But there is another:

Will the pension system remain fair across generations as people live longer?

A pension rule can perform extremely well according to the first criterion while performing poorly according to the second.

But can Denmark afford a slower increase in the retirement age?

Here comes the difficult part. There is no free lunch.

If future generations retire earlier than assumed under the current one-to-one system, there will be more pensioners, fewer workers and consequently lower tax revenues and higher pension expenditure.

We asked the DREAM group (link) to calculate the long-run economic consequences of the different retirement-age scenarios. The results are instructive

(DREAM published a working paper that explains the details; link).

- Under the current one-to-one rule, the fiscal sustainability indicator is approximately +1.0% of GDP. This means, as I mentioned earlier, that public revenues in the long run are projected to exceed public expenditures by one percent of GDP.
- If the retirement age instead remains permanently at 70, the retirement age politicians have decided will apply as of 2040, fiscal sustainability falls to −1.35% of GDP. Over the long run and year by year, government expenditures exceed government revenues by 1.35 percent of GDP.
- Under our fair-retirement-age proposal, it is approximately −0.41% of GDP.

Our proposal therefore has a fiscal cost relative to the one-to-one rule. But it is vastly less expensive than permanently freezing the retirement age at 70.

More importantly, these calculations raise a deeper question: What exactly do we mean when we say that public finances are "over-sustainable"?

Sending the bill to the children's room

A common argument for maintaining a one-to-one rule is that abandoning it would amount to sending the bill for today's welfare state to our children.

This argument has always bothered me. Because one could argue that a one-to-one rule does precisely that. It says to future generations: We want to maintain today's welfare state, taxes and public expenditure. To make the numbers add up, you will work not only more years than us, but also a larger fraction of your life.

In other words, part of Denmark's apparent fiscal over-sustainability arises because future generations are assumed to contribute more through longer and longer working lives.

Imagine an alternative fiscal rule. Suppose Parliament decided today that future generations should pay increasingly higher income taxes. Say, one percentage point more every five years.

Such a rule would obviously improve long-run fiscal sustainability. Would we then congratulate ourselves today on having extraordinarily sustainable public finances? Probably not. We would immediately see what was happening: future generations had been asked to finance today's choices.

Or imagine that we legislated today that future public expenditure should automatically be reduced every five years. Again, measured fiscal sustainability would improve. But nobody would regard the resulting fiscal surplus as a free resource available to current generations.

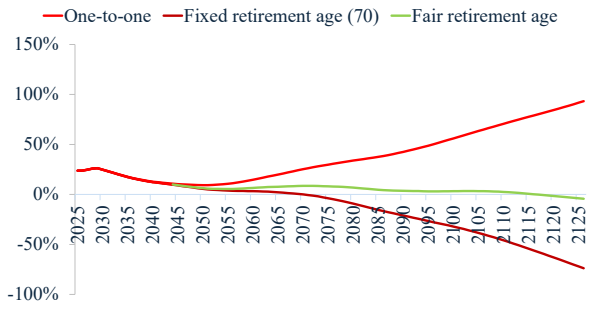
The retirement-age mechanism is economically different, of course, but the intergenerational issue is similar. This is why I think the usual discussion of fiscal sustainability misses something important. Financial sustainability and intergenerational fairness are not necessarily the same thing.

An even stranger result: the government becomes richer and richer

There is another feature of the one-to-one rule in Denmark that deserves attention. Under the standard projection, the

government initially runs primary deficits. But after approximately 2050, these turn into persistent surpluses. Consequently, public net wealth eventually rises continuously. It is shown in Figure 4.

***Figure 4**. Danish public net wealth as a share of Danish GDP under alternative retirement-age rules. Source: DREAM and RRR (2026)*



Under the one-to-one rule, public net wealth eventually approaches 100% of GDP in the projection period.

At the other extreme, with a retirement age permanently fixed at 70, public net wealth falls continuously and eventually becomes strongly negative. This seems to be the current challenge facing some other European countries, that is, countries that will not raise future retirement ages, cf. Figure 3.

Our fair-retirement-age proposal produces something quite different: public net wealth remains roughly stable over the very long run.

Neither of the two extreme paths seems like an obvious policy objective. Why should the government aim to accumulate an ever-larger stock of wealth forever? But equally, why should it accumulate ever-larger amounts of debt?

A roughly stable public net-wealth position seems at least worthy of consideration. This is exactly what our fair-retirement-age proposal produces in the long-run projections.

What about healthy life expectancy?

Finally, there is another point that receives less attention in the retirement debate. Living longer is not necessarily the same as living longer in good health.

Evidence suggests that healthy life expectancy rises with longevity, but less than one-for-one. Roughly 70–80% of remaining life for a 60-year-old can be regarded as healthy years. This matters.

Suppose longevity increases by twelve months. Under one-to-one indexation, the retirement age also increases by twelve months. But suppose healthy life expectancy increases by only nine months, which is 75% of the increase in life expectancy itself. The result is straightforward: healthy retirement becomes shorter.

Under our approximate 75% indexation rule, by contrast, the retirement age rises by about nine months when longevity rises by twelve months. If healthy longevity also increases by roughly nine months, the expected number of healthy retirement years remains approximately unchanged. This seems to me another attractive feature of the proposal.

Conclusion

Most countries need a rising retirement age. Freezing it permanently while people continue to live longer would impose substantial costs on future public finances. Our calculations, using Denmark as the example, make this very clear.

But this does not imply that the retirement age should increase one-for-one with longevity. Such a system effectively allocates almost all gains in longevity to additional working years. Consequently, future generations will spend a substantially smaller share of their lives in retirement than today's generations.

We propose a different principle: Treat generations fairly.

For Denmark, this means that if today's benchmark generation can expect to spend around 30% of adult life in retirement, future generations should be able to do approximately the same.

Under current longevity projections, this means that if Danes gain an additional year of life, roughly nine months would become additional working life and three months additional retirement.

Yes, measured fiscal sustainability would deteriorate. But perhaps that tells us something important. Denmark's celebrated fiscal over-sustainability is not manna from heaven. Part of it reflects an implicit claim on the working lives of future generations.

And this is where I think the Danish case contains a broader lesson. As more countries link retirement ages to longevity, they should not treat the indexation factor as a purely technical parameter chosen to make fiscal projections add up. It embodies a distributional choice.

When longevity increases, societies must decide how the additional years should be divided between work and retirement, and whether that division treats different generations fairly.

There is therefore more than one kind of sustainability: Fiscal sustainability matters. Political sustainability matters. And intergenerational sustainability matters too.