

The pension system can increase inequality

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Those who are rich also live longer. Pension systems that ignore this may cause a redistribution from the bottom to the top, say studies by TU Wien (Vienna).

Actually, the [pension](#) system is supposed to serve as a social equalizer.

Those who earn money pay into it. Those who can no longer work receive a pension. But when taking a closer look at the demographic data, a somewhat more complicated picture emerges: [life expectancy](#) is related to socio-economic status. Those who live in higher affluence live longer and thus collect pension payments for a longer time. Thus, it can happen that pension systems are no longer progressive, but become regressive—i.e. cause a redistribution from poorer to richer classes. Models of TU Wien (Vienna) show that this effect is very robust and should definitely be taken into account in future pension reforms.

Income, education and life expectancy

It is well established that life expectancy is related to socio-economic status. This is true both when comparing poorer and richer countries and when comparing different population strata within a country. "Statistics show that the difference in life expectancy between poorer and wealthier strata of the population has even increased in recent years," says Prof. Alexia Fürnkranz-Prskawetz, who studies different pension systems at the Institute of Statistics and Mathematical Methods in Economics at TU Wien together with Dr. Miguel Sanchez Romero.

Careful analysis is necessary to draw conclusions from such observations—after all, a correlation is not yet a causal relationship. Even stronger than the correlation between financial wealth and life expectancy is the correlation between [education level](#) and life expectancy: those who are educated live longer, and this group usually also has a higher income.

Cause and effect

"The matter becomes even more complicated due to the fact that people can, to a certain extent, estimate their own life expectancy and take it

into account in their decision making," says Alexia Fürnkranz-Prskawetz. "So the system sets incentives that change behavior, and this changed behavior then in turn decides how progressive or regressive a chosen system is." For those who expect to live longer, it is also more worthwhile to invest an extra year in education in order to have a higher income and thus higher pension payments. All these effects influence each other.

Therefore, mathematical models were developed at TU Wien to simulate these relationships. The results showed that pension systems can indeed lead to a redistribution from the bottom to the top. It is precisely the wealthy classes that receive particularly high payouts due to their longer life spans.

Where mathematics ends, politics begins

There is no clear mathematical answer to the question of how best to solve this problem: "Of course, different mortality tables could be used for different groups. You could adjust the pension contribution or the amount of the pensions accordingly so that each group does equally well," says Miguel Sanchez Romero, "but whether that is effective is another question altogether. After all, there are always trade-offs between redistribution, which is supposed to ensure more equality, and incentive effects, which are supposed to influence people's behavior, for example higher investment in education."

Nevertheless, Alexia Fürnkranz-Prskawetz and Miguel Sanchez Romero would like to make one important recommendation to policymakers: If you do not want to disadvantage any population group, you have to look at all areas of the social system at the same time. "You cannot look at the pension system separately from the health system or the education system," says Alexia Fürnkranz-Prskawetz. "We know that our pension system needs to be reformed. But in any future reform, it is essential to

take into account that different population groups benefit from the pension system in very different ways. If you overlook that, then you can easily end up with the opposite of what you wanted to achieve."

More information: Miguel Sanchez-Romero et al, Redistributive effects of different pension systems when longevity varies by socioeconomic status, *The Journal of the Economics of Ageing* (2020). [DOI: 10.1016/j.jeoa.2020.100259](https://doi.org/10.1016/j.jeoa.2020.100259)

Miguel Sanchez-Romero et al, The Impact of Reducing the Pension Generosity on Inequality and Schooling, *De Economist* (2020). [DOI: 10.1007/s10645-020-09359-w](https://doi.org/10.1007/s10645-020-09359-w)

Redistributive effects of pension reforms: Who are the winners and losers? ECON WPS - Working Papers in Economic Theory and Policy, No. 06/2021, www.econstor.eu/handle/10419/233978

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