

The impact of introducing a pension sustainability factor on inequality and growth

Miguel Sánchez-Romero¹, Philip Schuster², Alexia Prskawetz³

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Abstract:

We implement an overlapping generations model in which heterogeneous individuals optimally choose the number of years of education, health investment, consumption path, and labor supply. Vital rates (mortality and fertility) are assumed to depend on the level of education. To account for economic and demographic heterogeneity within each cohort, we assume individuals differ according to their learning ability, initial health deficits, and disutility from the effort of attending schooling. The results are based on counterfactual experiments run for Austria, in which we analyze the effect that a sustainability factor may have on inequality and growth.

Motivation

Population aging, as caused by low fertility levels and increasing life expectancy, challenges any social security system that is based on the redistribution of resources from the employed towards the dependent older population. The persistent population aging observed in most developed countries prompts governments to introduce reforms that guarantee the long-run sustainability of their social security systems. Various reform options of the pension system, which are targeted to increase its sustainability, are, among others, (i) delaying the effective retirement age, (ii) introducing penalties and rewards for early and late retirement, and (iii) linking the pension replacement rate to the remaining life expectancy. One of the above mentioned options can be achieved by introducing a sustainability factor. However, this reform transforms the unfunded and defined-benefit system into an unfunded and defined-contribution system. This is because the sustainability factor fixes the current contribution rate to a targeted value and links the evolution of pension benefits to the evolution of a compound index (which generally includes the evolution of the old-age support ratio and the difference between total contributions and total benefits claimed). As a consequence, the risk borne by the pension plan is transferred to the individual.

However, within countries, the difference in life expectancy between the high and low socioeconomic groups have widened in recent decades. For instance, in the US, this difference may be as large as 10-14

¹ Vienna University of Technology (TU Wien), Austria.

Wittgenstein Centre for Demography and Global Human Capital (IIASA, VID/ÖAW, WU), Vienna Institute of Demography/Austrian Academy of Sciences, Austria. Email: miguel.sanchez@oeaw.ac.at

² Oesterreichische Nationalbank, Austria. Email: philip.schuster@oenb.at

³ Vienna University of Technology (TU Wien), Austria.

Wittgenstein Centre for Demography and Global Human Capital (IIASA, VID/ÖAW, WU), Vienna Institute of Demography/Austrian Academy of Sciences, Austria. Email: afp@econ.tuwien.ac.at

years. Hence, ignoring this heterogeneity might jeopardize any reform, as the “ex ante” actuarial fairness of the system becomes highly regressive. Thus, the introduction of a sustainability factor in the pension system need to take into account that individual ageing is heterogeneous across socioeconomic groups. It is therefore necessary to investigate how a sustainability factor impacts on the decisions of heterogeneous individuals by socioeconomic status and on the degree of regressivity of the system across socioeconomic groups. This task implies developing models that account for the behavioral response of heterogeneous individuals with different life expectancies and healthy lives to changes in the pension system.

Sketch of the model

Our results are based on a general equilibrium model in which heterogeneous individuals by learning ability level, initial health deficits, and socio-economic status optimally decide about their consumption of market goods and life-saving goods, the length of schooling, their labor supply, and life expectancy. To account for the marginal effects that mortality and health may have on the length of schooling and retirement age, we follow Sánchez-Romero et al. (2016, 2019) and Bloom et al. (2014). Moreover, following Daalgard and Strulik (2014) the model is implemented assuming that individuals accumulate health deficits over the lifecycle, which can be slowed down by investing in health.

Simulations and discussion

To evaluate the impact of introducing a pension sustainability factor on inequality and growth, we compare the results of the general equilibrium model with a pension sustainability factor (baseline) and without a pension sustainability factor (counterfactual). At the macro level, we investigate with this exercise the impact of introducing a sustainability factor on income inequality, on wealth inequality, and on growth. At the micro level, we investigate the effect that the pension sustainability factor will have on the length of schooling, the labor supply, and on health investment across the different socioeconomic groups. To improve the discussion about the impact of a pension sustainability factor on inequality, we provide estimates of the internal rates of return by education group and across cohorts.

References

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