# Optimal Investment with Intergenerational Solidarity

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The Law Future Pensions (Wet Toekomst Pensioenen, WTP), adopted in 2023, adds the Netherlands to the growing list of countries whose second pension pillar is changing to a defined contribution plan. Due to the cessation of guarantees in this plan, pension funds have been given the novel task of finding an optimal *solidary* strategy, that aims to prevent so-called "fortunate" and "unfortunate" generations. This paper investigates how differences in pensions can be reduced by changing the investment strategy during the accumulation phase. The classic life-cycle does not have this solidarity feature, as it is based on a utility function that only considers its own wealth. For this reason, we adapt the utility functions such that a cohort not only looks at itw own accumulated wealth, but also compares this to the wealth of the preceding cohort. The optimal investment strategy that is found as a solution to this novel problem, what we call the "intergenerational" life-cycle, deviates significantly from the classic life-cycle. We observe the "intergenerational" strategy de-risks during the periods in which consecutive cohorts are not both investing, but increases exposure during periods in which they are both accumulating. Furthermore, we observe that, due to the finite leverage and quasi-linearity, that our solution bears a strong resemblance to the "$100 - age$" rule, which is often used in practice in the Netherlands. Finally, we conduct multiple simulations which confirm that, without any loss of the level of wealth, the pursued leveling effect of the investment strategy is indeed realized.