Population Heterogeneity in Defined Contribution Pension Schemes

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Population ageing has implications on sustainability of pension systems and governments have acted in recent years to find more sustainable pension schemes. In this regard, in many countries a gradual shift from defined benefits (DB) to defined contributions (DC) system is occurring. According to the latter scheme, contributions paid during the working life are accumulated until the retirement age, when the amount is converted into a life annuity through annuitisation factors taking into account the forecasted expectancy of life. In order to ensure actuarial fairness of pension contracts longevity risk has to be taken into account. Moreover, fairness is hindered by mortality heterogeneity. In fact, mortality rates are influenced by race, ethnicity, income, wealth, marital status and educational attainment but these aspects are not considered in DC pension plans and the same annuitisation factors are applied for different individuals. The aim of this paper is to analyse the effect of mortality heterogeneity in DC plan, focusing on the resulting redistribution of wealth between different groups of individuals.Computationally, numerical analysis is provided.

References

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