

**Individual post-retirement longevity risk  
Management under systematic mortality risk**

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14th August 2011

**Abstract**

This paper analyzes an individual's post retirement longevity risk management strategy allowing for systematic longevity risk, recent product innovations, and product loadings. A complete-markets discrete state model and multi-period simulations of portfolio strategies are used to assess individual longevity insurance product portfolios with differing levels of systematic and idiosyncratic longevity risk. Portfolios include: fixed life annuities, deferred annuities, inflation-indexed annuities, phased withdrawals and recently proposed group self-annuitization (GSA) plans. GSA plans are found to replace even inflation-indexed annuity products when there are loadings on guaranteed life annuity products. With a bequest motive and loadings, coinsurance portfolio strategies with phased withdrawals and GSA's dominate portfolios with life annuities or deferred annuities.

**Keywords:** longevity risk, optimal insurance, life annuity, group self-annuitization (GSA), market frictions

**JEL Classifications:** D14, E21, G22, G23