
Modelling Spousal Mortality Dependence: Evidence of Heterogeneities and Implications for Valuation of Annuity/Pension Liabilities".

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Abstract:

We conduct an analysis of mortality dependence between the lifetimes of a couple. We use a mixed proportional hazard type model with a new semi-parametric specification for the unobserved heterogeneities. Our model is able to disentangle the dependence due to the death of the spouse, often called "broken-heart syndrome", and that due to observed and unobserved heterogeneities. Using data on reversionary annuities, we find evidence of both sources of dependence, and the amount of the annuity accounts for a significant portion of the heterogeneity among couples. We also carry out numerical work to investigate the impact of the dependence in terms of the pricing and reserving of annuity. These results have also important implications for pension plans, since most of them currently cover reversionary beneficiaries