Can Longevity Risk Alleviate the Annuitization Puzzle?
Empirical Evidence from Survey Data

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Summary

- The paper "shows" that people who EXPECT to live longer CLAIM to prefer annuities over lump-sum payments.

- On which data? DNB Household Survey 2009

- Which questions? 1) Suppose you were 65: would you prefer to receive 100% of your pension as an annuity or 50% as an annuity and 50% as a FAIR lump sum payment? 2) would you change your mind if your first choice were LESS THAN FAIR?

- How? First, the Authors provide some statistics.

- Second, they compute the marginal effect of the subjective survival probability at 75 and 95 (significant).

- Third, they compute the marginal effect of the annuity equivalent wealth, namely the extra-wealth needed to compensate for the lump-sum choice, in a rational neoclassical CRRA model (significant if subjective probabilities are used).

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Comments: the key question

- Is the exchange between the annuity and the lump sum payment FAIR?

- is the present value of the annuity, using the 2009 term structure of interest rate and the 2009 cohort HMD (human mortality database) survival probabilities 81,000? NO!!!!!

- it is worth 66,391 euros. Everyone should prefer a lump sum of euros 81,000;

- NO SURPRISE THAT PROBABILITIES HIGHER THAN THE HMD ONES ARE NEEDED, to shift preferences towards the annuity;

- Still, lower rates than LIBOR in discounting could do the same job.

- The Authors prove that acceptance of the annuity is correlated with probability assessment, but they do not investigate how people discount.

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Comments: importance of the key question

The issue matters in a low-rate environment, since the lower the discount rate, the higher the effect of longevity risk.
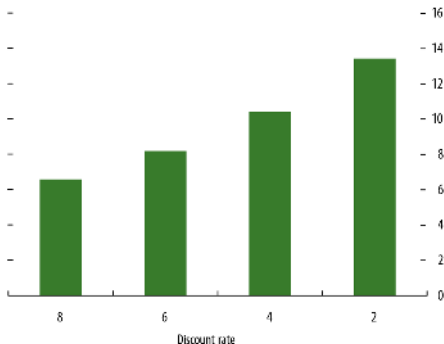

Figure: Increase in Actuarial Liabilities from 3 year longevity shock, by Discount Rate (values in percentage). Source IMF (2012)

Comments: then, what does the paper show?

- If the benchmark were fair, the paper would show that adverse selection exists in the NL!!
- There is high consensus both on the fact that subjective probabilities matter, as the Authors show in this sample, and on adverse selection.
- Still, pleasant confirmation.

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Comments: still, are the policy implications robust?

- The Authors claim that "the annuitization puzzle can be alleviated by helping individuals better assess their longevity risk". Can or did policy makers appropriately ASSESS survival probabilities?

- No, based on regulatory rules and past experience,

- Probably not, because of uncertainty in probabilities themselves,

- Probably not, because of cohort-specific probabilities .

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Past experience shows that predicting actual survivorship is quite hard...
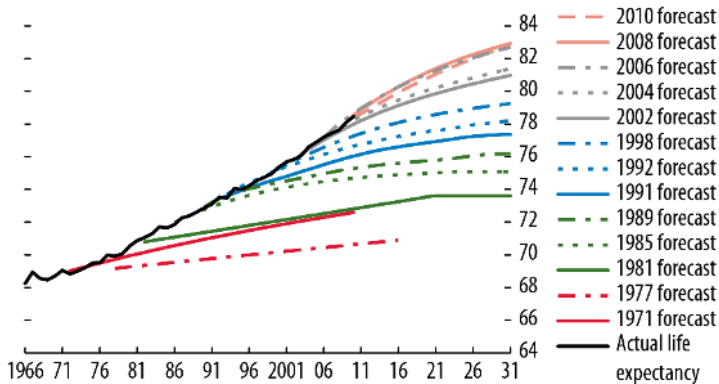
Figure: Over time, underestimate has been on average three years. Source IMF (2012)

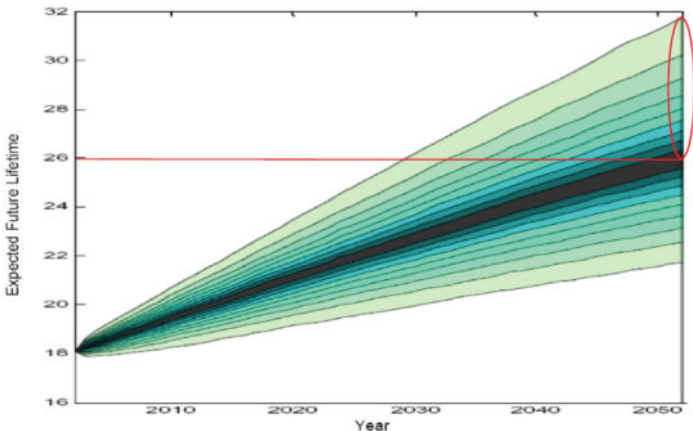# Improvements in survivorship must be done acknowledging that they are uncertain (model risk)

Figure: Source: Dowd K, Blake D, Cairns A. Facing Up to Uncertain Life Expectancy: The Longevity Fan Charts. Demography. 2010; 47(1): 67-78.
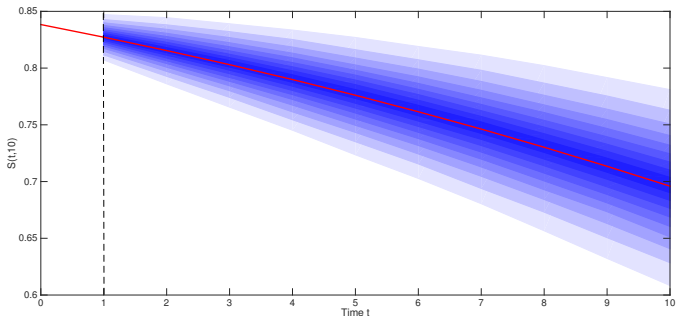
Figure: 10 years Survival Probability simulations UK 65y males. Source: De Rosa C, Luciano E, Regis L, Hedging and risk-return frontier in insurance: an ALM perspective, Springer books, in press.

and that probabilities and their improvements are cohort and nation-specific, even at 65
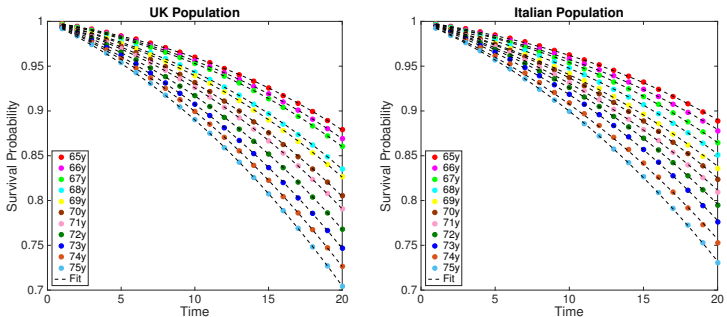

Figure: Fit of Survival probabilities. Source: De Rosa C, Luciano E, Regis L, Intl Diversification in annuity portfolios,Scandinavian Actuarial Journal. 2016.

and that correlation of probabilities across cohorts and populations is not one
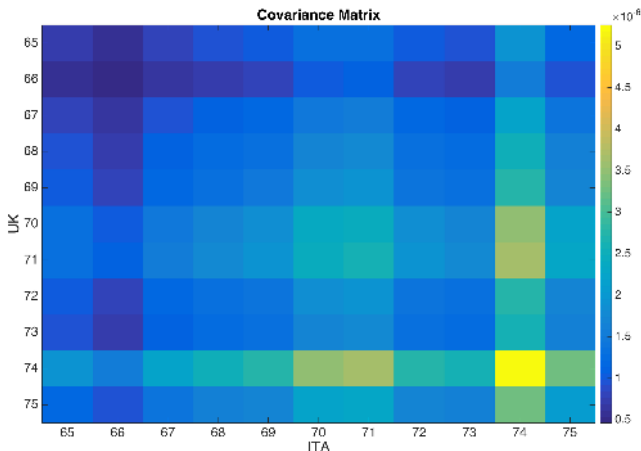

Figure: Covariance matrix between Italian and UK generations. Source: De Rosa C, Luciano E, Regis L, Intl Diversification in annuity portfolios, Scandinavian Actuarial 1/13

Conclusions

- Nice measurement of correlation between self-declared survival probabilities and annuity behavior, or adverse selection in annuity, both when directly measured and when using Brown and Poterba (2000).

- Endogeneity is an issue (education and probability, f.i.).

- Difficult to extract policy implications.

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