Optimality in mortgage design under uncertain lifetime

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Abstract

This paper studies optimal investment and consumption in relation to mortgage product design. The study is based on advances in stochastic control theory, e.g. Korn and Kraft (2002), allowing explicit solutions to portfolio problems with stochastic interest rate. The present study solves a simple version of the investment and consumption problem formulated in Kraft and Munk (2011), with the addition of mortality risk and access to an annuity market. Through this, it is examined how assumptions regarding preferences, labour income and mortality translate into mortgage product design and how the results relate to mortgage products offered in the market today.