Optimal time to enter a retirement village

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Abstract

We consider the financial planning problem of a retiree wishing to enter a retirement village at a future uncertain date. The date of entry is determined by the retiree's utility and bequest maximisation problem within the context of uncertain future health states. In addition, the retiree must optimally choose consumption, investment, bequest and purchase of insurance products prior to her full annuitisation on entry to the retirement village. A hyperbolic absolute risk aversion (HARA) utility function is used to allow necessary consumption for basic living and medical costs. The retirement village will typically require an initial deposit upon entry to the village. This threshold wealth requirement leads to replication of an American put option to be exercised at the uncertain stopping time.

Keywords: Retirement village, Optimal control, Optimal stopping, HARA, American put.