Longevity assets and pre-retirement consumption/portfolio decisions

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Abstract

We derive a closed form solution for the optimal consumption/ investment problem of an agent whose force of mortality is stochastic and whose financial horizon coincides with a fixed retirement date. The investment set includes a longevity asset, as a derivative on the force of mortality. We explore the optimal choices of a representative agent having Hyperbolic Absolute Risk Aversion preferences on both consumption and final wealth. Our numerical analysis shows that individuals optimally invest a large fraction of their wealth in the longevity asset. In our base scenario, calibrated on real world data, a 60-year old male retiring after 5 years should invest around 88% of his wealth in the longevity asset. Such a percentage decreases as time to retirement decreases. We explore sensitivity of our results to market and individual characteristics.

Keywords: longevity risk; pre-retirement savings; consumption/ portfolio choices; HARA preferences.

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