

Title: Using Survivorship Bonds to reduce an Economy's Aggregate Value-at-Risk

Abstract: In this paper we model the reduction in Value-at-Risk due to non-systemic longevity risk when longevity risk is reallocated between entities long on longevity risk and entities short on longevity risk. We model the Value-at-Risk in an economy with life insurance companies and pension plans, short and long on longevity risk respectively, with populations positively but not perfectly correlated. We minimize and compare aggregate Value-at-Risk under the following scenarios: no risk transfer, risk transfer using a single index survivorship bond and q-duration matching, birth-cohort survivorship bonds, and complete liability transfer.

Paul Hance, ASA

Transamerica Retirement Services

1150 S Olive St., T-07-01

Los Angeles, CA

Email: paul.hance@transamerica.com

Phone: 213-742-2022