

1035-60-850

Guangwei Fan* (gfan@maryville.edu), Mathematics and Actuarial Science, 650 Maryville University Drive, St. Louis, MO. *Probability of Ruin with Dependent Marginal Mortality Distribution*. Preliminary report.

In this paper, we establish a theory for the eventual probability of ruin for a joint life with dependent mortality. By introducing copulas, we demonstrate that the probability of ruin can be represented as the realistic marginal distributions that capture the essential empirical feature of risks with skew and fat-tails. Various mortality risks and conclusions of the probability of ruin are studied. As an application, we provide an estimate for the probability of ruin by the rate of investment return and the mortality rate with the data from Asia-Pacific region. (Received September 18, 2007)