

**Coppola, Mariarosaria; Di Lorenzo, Emilia; Sibillo, Marilena**

**Risk sources in a life annuity portfolio: decomposition and measurement tools.** (English)

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Summary: The paper considers a model for a homogeneous portfolio of whole life annuities immediate. The aim is to study two risk factors: the investment risk and the insurance risk. A stochastic model of the rate of return is used to study these risk factors. Measures of the insurance risk and the investment risk for the entire portfolio are suggested. The problem of the longevity risk is presented, and its consequences with different projections of the mortality tables are analyzed. The model is applied to some concrete cases, and several illustrations show the importance of the two components of the riskiness in terms of the number of policies in the portfolio. Understanding these risks will allow insurance companies to control, to some extent, the overall risk of their annuity portfolios.

**MSC:**

91B30 Risk theory, insurance (MSC2010)

91B28 Finance etc. (MSC2000)

Cited in **6** Documents

**Keywords:**

Ornstein-Uhlenbeck process; investment risk; insurance risk; longevity risk; moments of insurance functions