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EVALUATING INSURER'S RISK EMBEDDED IN THE KOREAN REVERSE MORTGAGE PROGRAM USING CONCURRENT SIMULATION METHOD

Abstract:

The paper conducted a concurrent simulation analysis to evaluate guarantor's risk in the reverse mortgage annuity program, considering that key variables of the program change simultaneously with their own stochastic processes. From the analysis with the data covering a period from September 2004 to December 2014, it was revealed that the probability of the guarantor having net liability (or net loss) turned out almost nothing (ie. merely 3.65%). Therefore, it is interpreted that the current program was designed very safely for the interest of guarantor and has room to increase monthly payment for annuitants.

We also evaluated the effect of individual variable's volatility on the magnitude of guarantor's total risk. From the analysis, it was confirmed that the current reverse mortgage program was designed to offset longevity risk which may increase with the period mortality rate of 2013 life table by market risk which can decrease with assuming low growth rate of housing price and high level of loan rates. The concurrent simulation is viewed as a more realistic way for evaluating guarantor's risk because it assumes key variables to change simultaneously with their interdependency in the analysis. Therefore, the concurrent simulation results could give more rational implications to the government's policy makers as well as the reverse mortgage annuity market.

Keywords:

Reverse Mortgage Annuity, Stochastic Process, Guarantor Risk Evaluation, Concurrent Simulation

JEL Classification: G20, G22