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**Valuation of the reset options embedded in some equity-linked insurance products.** (English)

Zbl 1083.91511

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**Summary:** This paper proposes a method for valuing American options using a Monte Carlo simulation approach. Our approach can be used to price the reset feature found in some equity-linked insurance contracts. We model this feature as a multiple shout option and give examples based on certain equity-linked insurance products that are very popular in Canada. These contracts are known as segregated fund contracts and the valuation of the embedded options in these contracts has posed serious challenges for actuaries. One of the advantages of the Monte Carlo approach in this connection is that it can be extended to handle different investment assumptions as well as multiple assets. We show how to modify the stochastic mesh model of Broadie and Glasserman (1997) to incorporate quasi-Monte Carlo in the simulation and thus improve the efficiency. We benchmark the efficiency gains in our method using standard American options and multiple shout options.

**MSC:**

[91G60](#) Numerical methods (including Monte Carlo methods)

[65C05](#) Monte Carlo methods

Cited in **11** Documents

**Software:**

[Algorithm 647](#); [TOMS659](#)

**Full Text:** [DOI](#)

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