

# The Market Value of Life Insurance Liabilities Under a Regime Switching Process

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## Abstract

This paper studies the values of the equity and liabilities of life insurance companies in the presence of regime switching in the economy. Following the contingent claim work of Grosen and Jorgensen (2002), where the equity and liability of a life insurance company are evaluated as a barrier option framework, this paper proposes a model where the dynamic evolution of the assets follows a geometric Brownian motion with parameters switching according to a continuous-time Markov chain process with discrete state values. After deriving valuation formulas, numerical implementation is illustrated using US life insurance data, providing strong evidence of switching behaviour on the market affecting the contingent claim valuation.

**Keywords:** life insurance, market value, switching regimes, option pricing.

**JEL Classifications:** G12, G22

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