# Mortality Regimes and Pricing

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**Abstract**

Mortality dynamics are characterized by changes in mortality regimes. This paper describes a Markov regime switching model which incorporates mortality state switches into mortality dynamics. Using the 1901-2005 US population mortality data, we illustrate that regime switching models perform better than well-known models in the literature. Furthermore, we extend the Lee-Carter (1992) model in such a way that the error term of the time-series common factor has distinct mortality regimes with different means and volatilities. Finally, we show how to price mortality securities with this model.

Keywords: Lee-Cater model, regime switching mortality model, mortality-linked securities

JEL classification: C02, C13, G22, G23

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