

Lee-Carter Mortality Forecasting Method with Dynamic Normal Inverse Gaussian Mortality Index

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Abstract : Pension scheme providers have to price mortality risk by accurate mortality forecasting method. There are many mortality-forecasting methods constructed and used in literature. The Lee-Carter model is the first model to consider stochastic improvement trends in life expectancy. It is still precisely used. Mortality forecasting is done by mortality index in the Lee-Carter model. It is assumed that mortality index fits ARIMA time series model. In this paper, we propose and use dynamic normal inverse gaussian distribution to modeling mortality index in the Lee-Carter model. Using population mortality data for Italy, France, and Turkey, the model is forecasting capability is investigated, and a comparative analysis with other models is ensured by some well-known benchmarking criterions.

Keywords : mortality, forecasting, lee-carter model, normal inverse gaussian distribution

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