A time-dependent age-factor extension to the
Lee-Carter model for mortality reduction factors

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ABSTRACT

In this paper we investigate the effect of the time independent assumption of the age parameters in the Lee-Carter model. Using English and Wales mortality data we show that there exists substantial age-time interactions in the age parameters. We use a three step procedure to estimate the parameters. First, we estimate the time and age dependent parameters. Second, we model the age parameters in a parametric form. Third, we forecast the time-dependent parameters.

Keywords: Longevity risk, Lee-Carter, GMM.

JEL Classifications: C61, G22, G23, J11.