

## **Death and its determinants**

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### **Abstract**

In this paper, we examine recent developments highlighted by the epidemiological literature and assess the evidence for their contribution to mortality decline across a number of OECD countries. We consider whether the space spanned by the latent factor structure in mortality data can be adequately described by developments in GDP per capita, public and private health expenditure and lifestyle-related risk factors using statistical techniques recently developed in macroeconomics and finance. We then judge the forecastability of historical trends and construct an epidemiologically-informed model for future mortality using the Bayesian hierarchical modelling approach of King and Soneji. We compare this with the Lee Carter model. We finally address the effect on pricing of annuity business when taking causal factors into consideration.