

EAA Seminar
**“Modelling and Validating
Mortality under Solvency II”**
10/11 March 2016 | Madrid, Spain



Organised by the EAA - European Actuarial Academy GmbH in cooperation with the Instituto de Actuarios Españoles.

1. Introduction

In Europe the upcoming Solvency II regulations imply significant changes in the risk management of insurance companies. Under these new regulations companies are encouraged to quantify a 99.5% Value-at-Risk over a one-year horizon using an Internal Model, or by using the Standard Formula provided by EIOPA. In this seminar we focus on modelling mortality risk, which we define as the risk of unexpected changes in the trend underlying future mortality rates. For the simulation of mortality rates, a wide variety of stochastic models have been proposed in the literature. We will discuss various aspects of mortality model specification, calibration, and application, and provide ideas and practical advice for the implementation of these models. Also examples of modelling portfolio-specific mortality and the validation of mortality models under Solvency II will be discussed.

2. Participants

The seminar is specially developed for (life) actuaries, risk managers or statisticians working in actuarial, risk management and model validation departments. A basic knowledge of life techniques in actuarial science and statistics is useful. Attendees are encouraged to bring a laptop computer with Microsoft Excel and also Cran R¹ installed.

¹ The latest version of Cran R can be downloaded via the website <http://www.r-project.org/>

3. Purpose and Nature

The seminar combines methodological concepts within mortality modelling with many practical examples and applications within a Solvency II context. A case study will be performed in order to obtain full understanding of the presented techniques. After attending this seminar, participants will be familiar with most recent insights within mortality modelling within Solvency II.

During the seminar, participants will have the opportunity to apply mortality models, analyse model fits, calculate impacts and validate model choices within Excel and R, both for population and portfolio-specific mortality. Outcomes will also be compared to the Solvency II Standard Formula scenario for mortality and longevity risk.

4. Lecturers

Dr Katrien Antonio

Katrien Antonio is associate professor in the Insurance research group at KU Leuven (Belgium) and assistant professor in the Actuarial Sciences and Mathematical Finance group at the University of Amsterdam. Katrien studied Mathematics at KU Leuven and obtained her PhD degree in 2007 at the same university. Her research puts focus on statistical modelling for life and non-life insurance, including stochastic loss reserving, pricing models and stochastic mortality models. In 2014 Katrien was a member of the working group of the Dutch Actuarial Association that published a stochastic mortality model for The Netherlands. She is also the lead researcher in charge of the 2015 Belgian mortality projection, published by the Institute of Actuaries in Belgium.

Wilbert Ouburg MSc FRM AAG

Wilbert Ouburg works as an actuary and financial risk manager at Delta Lloyd Group, an insurance company operating in the Netherlands and Belgium. He studied both Mathematics (Utrecht University) and Actuarial Science & Mathematical Finance (University of Amsterdam), and followed a post-graduate teaching program in mathematics. His master's thesis on Bayesian mortality modelling was awarded the Netspar thesis award. He is a member of the Royal Dutch Actuarial Society and a Financial Risk Manager at the Global Association of Risk Professionals. In 2014 Wilbert was a member of the working group of the Dutch Actuarial Association that published a stochastic mortality model for the Netherlands.

Prof. dr. ir. Michel Vellekoop

Michel Vellekoop is full professor in the Actuarial Sciences and Mathematical Finance group at the University of Amsterdam. He studied Applied Mathematics at the University of Twente and obtained his PhD. degree in 1998 at Imperial College in London for research on nonlinear filtering problems for stochastic processes. Since then he has focused on applications in finance and insurance, both as an academic and as director of research for the Derivatives Technology Foundation. His main interests are valuation and risk management problems for contingent claims in complete as well as incomplete markets. Since 2009 he has been theme coordinator for Netspar, the Dutch research network for studies on pensions, ageing and retirement. In 2014 he was a member of the committee of the Dutch Actuarial Association that was responsible for the design of a new stochastic mortality model for the Netherlands.

Dr. Fernando Ariza (guest speaker)

Fernando Ariza works as the Head of Risks and Solvency's Area at Mutuallidad de la Abogacía (Spain) and is in charge of its Risk Management and Actuarial Key Functions. He is also visiting professor at Carlos III University and ICEA (Spain). He studied both Economics and Actuarial Sciences (Complutense University), and obtained his PhD degree in Financial, Actuarial and Mathematics Economy at the same University for the doctoral thesis "The Incidence of Longevity Risk on the Solvency of Life Insurances Companies". In 2014 Fernando was awarded with the VII International Julio Castelo Award as co-author of the research study "Longevity Risk and its practical application to Solvency II". Currently he is also the Technical Coordinator of the AGERS's Bioactuarial Research Group (GβI) and member of the International Technical Committee of EurelPro for the improvement of social protection and pension schemes system for liberal professionals all over Europe.

5. Language

The language of the seminar will be English.

6. Preliminary Programme

Thursday, 10 March 2016

08.45 – 09.00	Registration
09.00 – 09.15	Introduction and welcome (EAA & IAE)
09.15 – 10.30	Module 1: Introduction in mortality and demographics
10.30 – 10.45	Coffee Break
10.45 – 12.30	Module 2: Fitting a Lee-Carter mortality model
12.30 – 13.30	Lunch
13.30 – 15.00	Module 3: Calibration and prediction of mortality models
15.00 – 15.15	Coffee Break
15.15 – 17.00	Module 4: Multi-population mortality models
17.00 – 18.00	Longevity Risk Management Solutions under the Solvency II Framework (Guest Talk)
approx. 19.30	Dinner

Friday, 11 March 2016

09.00 - 10.30	Module 5: Mortality modelling and validation under Solvency II
10.30 - 10.45	Coffee Break
10.45 - 12.30	Module 6: Modelling portfolio-specific mortality
12.30 - 13.30	Lunch
13.30 - 15.10	Module 7: Case study
15.10 - 15.15	Concluding remarks, closing of seminar (EAA)

7. Fees & Registration

Please register for the seminar as soon as possible because of the expected demand. If there are more persons interested in this seminar than places available we will give priority to the registrations received first. Please send your registration as soon as possible by using our online registration form at www.actuarial-academy.com.

Your registration is binding. Cancellation is only possible up to 4 weeks before the first day of seminar. If you cancel at a later date, the full seminar fee is due. You may appoint someone to take your place, but must notify us in advance. EAA has the right to cancel the event if the minimum number of participants is not reached.

Please always give your invoice number when you effect payment. All bank charges are to be borne by the participant. We will send you an invoice, please allow a few days for handling.

Your early-bird registration fee is € 790.00 plus 20 % VAT until 14 January 2016. After this date the fee will be € 970.00 plus 20 % VAT.

8. Accommodation

The seminar will take place in Madrid, Spain.

Venue and accommodation details will be published on the seminar website soon.

9. CPD

For this seminar, the following CPD points are available under the CPD scheme of the relevant national actuarial association:

Austria: 12 points
Belgium: 12 points
Bulgaria: 12 points
Czechia: 2-3 points (individual accreditation)
Estonia: 12 hours
Germany: 13 hours
Hungary: 13 hours
Italy: approx. 4 credits (GdLA individual accreditation)
Netherlands: approx. 12 PE-points (individual accreditation)
Russia: 40 points
Slovakia: 8 CPD points
Slovenia: 50 points
Switzerland: 15 points

No responsibility is taken for the accuracy of this information.