

EAA Seminar  
**An Introduction to Economic Scenario  
Generators and their Validation**

12/13 April 2018 | Madrid, Spain



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

### **Introduction**

The Economic Scenario Generators are at the core of stochastic models used by insurance companies. The applications of stochastic models are very diverse and include such applications as economic capital under Solvency II, ALM projections, dynamic hedging etc. All these applications impose different requirements upon the generation and the validation of economic scenarios.

### **Participants**

This seminar has NOT been designed for those participants eager to find out which capital market scenario will materialize in the coming months and years so that they can maximize their wealth. Unfortunately, we have lost our crystal ball, which is a real shame.

This seminar has been developed for professionals who are interested in Economic Scenario Generators because they deal with one or more applications of those and who are familiar with the basic concepts of financial maths. In-depth knowledge of capital market models is clearly NOT a pre-requisite, as this seminar does not aim at ESG experts.

Attendees are encouraged to bring a laptop computer with Microsoft Excel installed.

## Purpose and Nature

In the seminar, we begin by describing random number simulation techniques, which underpin ESG work. We also talk about variance reduction techniques, which improve the efficiency / the precision of stochastic modelling. We move on to discuss risk-neutral equity modelling and interest rate modelling. We conclude our program on day 1 by considering real-world scenario generation.

On day 2, we talk about ESG validation aspects before moving on to the ESG applications. First, we introduce the ESG Rebasing technology, which allows the users to produce univariate and combined stress scenarios by recycling their baseline ESG package. We continue by discussing a case study of a UK Internal Model Firm, which has implemented Daily Solvency Monitoring to operationalize their Solvency II calculations for risk management purposes.

## Language

The language of the seminar will be English.

## Lecturers

Michael Leitschkis is a Principal with Milliman. Michael has been dealing with various ESG aspects for about 10 years in the context of MCEV and Solvency II, including credit risk modelling and proxy modelling techniques such as Least Squares Monte Carlo. He has been part of the German Actuarial Society (DAV) working party dedicated to Economic Scenario Generators and taught Financial Mathematics at the University of Cologne.

Russell Ward is a Principal with Milliman, focusing on capital modelling, guarantee product development and ALM all of which involve the use of ESGs. Prior to joining Milliman, Russell headed Ernst & Young's actuarial modelling services for Europe leading implementation of stochastic asset-liability models and the review of ESGs for some of the firm's audit clients. While on secondment to the FSA, Russell played a key role in the development of the regulator's approach to the review of risk-based capital under the Individual Capital Assessment (ICA) regime.

Mario Zacharias is a Consultant at the Düsseldorf office of Milliman. He specializes in market risk modelling of life insurance companies and assists his Clients with the implementation and validation of valuation and real-world models for market risk factors and their aggregation, as

well as with the application of Least Squares Monte Carlo (LSMC) proxy models in the context of Internal Models under Solvency II.

## Preliminary Programme

### Thursday, 12 April 2018

08.45 - 09.00	Registration
09.00 - 09.15	Introduction & Welcome by EAA
09.15 - 10.45	Simulation of Random Numbers: Basic Recipes from ESG Kitchen
10.45 - 11.15	Coffee Break
11.15 - 12.45	Risk-Neutral ESG: Equity Modelling
12.45 - 13.45	Lunch
13.45 - 15.15	Risk-Neutral ESG: Interest Rate Modelling
15.15 - 15.45	Coffee Break
15.45 - 17.00	Real-World Scenarios: Basics and Case Study
approx. 18.30	Dinner

### Friday, 13 April 2018

09.00 - 10.30	ESG Validation Aspects
10.30 - 11.00	Coffee Break
11.00 - 12.30	ESG Rebasing, or How You Get More For Less
12.30 - 13.30	Lunch
13.30 - 15.00	Daily Solvency Monitoring: Case Study from a UK Internal Model Firm
15.00 - 15.05	Concluding Remarks, closing of Seminar (EAA)

## 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](http://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 later, 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 21 % VAT until 12 February 2018. After this date the fee will be € 970.00 plus 21 % VAT.

## Venue & Accommodation

The seminar will take place at the hotel

H10 Puerta de Alcalá

Alcalá 66

28009 Madrid, Spain

Phone: +34 91 4351060

[Hotel website](#)

We have arranged special prices for accommodation. The special rate is 135 € per night including breakfast and VAT. It is valid for bookings by 22 March 2018 out of our allotment "EAA Seminar". Our allotment includes a limited number of rooms. Kindly book your accommodation directly with the hotel using the booking form on our website, and note the hotel's cancellation policy.

## CPD

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

Austria:	10 points
Belgium:	10 points
Bulgaria:	12 points
Czech Republic:	2-3 points (individual accreditation)
Estonia:	10 hours
Germany:	11 hours
Hungary:	11 hours
Italy: approx.	4 credits (GdLA individual accreditation)
Netherlands:	approx. 10 PE-points (individual accreditation)
Russia:	40 points
Slovakia:	8 CPD points
Slovenia:	50 points
Spain:	11 hours
Switzerland:	15 points

No responsibility is taken for the accuracy of this information.