

EAA Seminar

Non-Life Pricing: Introduction to Practical Implementation of Modern Techniques in R

19/20 March 2018 | Athens, Greece



Organised by the EAA - European Actuarial Academy GmbH in cooperation with the Hellenic Actuarial Society.

Introduction

Non-Life insurance is facing a lot of challenges ranging from fierce competition on the market or evolution in the distribution channel used by the consumers to evolution of the regulatory environment (Solvency II, IFRS...).

Pricing is the central link between solvency, profitability and market shares (volume). Improving pricing practice encompasses several dimensions:

- Technical: is our pricing adequate to cover the underlying cost of risk of my policyholders and the other costs we are facing? Which are the key variables driving the risk? Are they adequately taken into account in our pricing?
- Competition: at what price will we attract the segments that we target and price out those that we don't want? Is the positioning of our competitors influencing our pricing practice?
- Elasticity: what (new) price are our existing customers prepared to accept?
- Segmentation: is our segmentation granular enough for our purposes?

The aim of this seminar is to present the actuarial/statistical techniques usually used in non-life pricing. This seminar is a strong introduction to these techniques and will be followed in the next few months by an advanced seminar of the EAA presenting new techniques that are being used.

Participants

The seminar is specially developed for non-life actuaries or statisticians working in product development or risk management departments. A basic knowledge of non-life premium calculation mechanisms is useful but not necessary.

Attendees are encouraged to bring a laptop computer with R installed as well as some useful packages (all the information will be provided after subscription).

Purpose and Nature

The seminar will alternate between methodological concepts, practical examples and case studies in order to ensure a comprehensive understanding of the techniques.

Participants will have the opportunity to apply in the R software concepts they will have learned in the theoretical sessions, using fictitious data. They will adjust GLM models, understand how results should be interpreted, perform statistical (significance) tests, etc.

A business game will be organised as follows: the participants will be separated in several fictitious insurance companies operating in the same market. Starting with their current tariff and positioning, each fictitious company will have to review its tariff taking into account its expected profitability (technical tariff), the objectives of the management (positioning), the tariff of the competitors (via a dispersion analysis) and the behaviour of its customers (elasticity to price changes).

A basic knowledge of the R software is useful. Some training material will be provided before the seminar to the participants needing an introduction to R so that they can go through it by themselves.

Language

The language of the seminar will be English.

Lecturers

Samuel Mahy (Reacfin)

Samuel graduated as MSc. In Engineering (Applied Mathematics) with an additional minor in Economy and also holds a Master in Actuarial Sciences. He is a qualified actuary of the Institute of Actuaries in Belgium (IA|BE) and involved in the Reinsurance and Non-Life Workgroup of the IA|BE. He is the Head of the Non-Life Center of Excellence at Reacfin. Samuel has been active 5 years in the reinsurance sector where he was involved in reinsurance pricing model developments. At the same time he was also the main responsible of the UK market portfolio profitability follow-up. Samuel joined Reacfin in June 2010 as a specialist in Non-Life Insurance and Reinsurance. As a director, he is involved in various missions as in the modelling, implementation and validation of pillar I deliverables (standard

approach and (Partial) Internal models), reinsurance optimization, model documentation or non-life pricing model development for several lines of business.

Xavier Maréchal (Reacfin)

Xavier is founder and CEO of Reacfin. He is one of the co-authors of: "Actuarial Modeling of Claim Counts: Risk Classification, Credibility and Bonus-Malus Systems" (Wiley, 2007). Xavier has obtained different academic degrees as: MSc. In Engineering (Applied Mathematics), MSc. Actuarial Sciences and MSc. Management. Xavier is a qualified actuary of the Institute of Actuaries in Belgium (IA|BE) and Member of the Non-Life workgroup of the IA|BE. Xavier has extensive experience in the actuarial field obtained during his 14 years as a principal consultant for many national and multinational insurance companies. He has gained a complementary experience in various fields going from Non-Life ratemaking and provisioning to life modelling and ALM. After several years of intensive modelling activities essentially in non-life insurance, Xavier works now as reviewer and mentor for consultants.

Preliminary Programme

Day 1, 19 March 2018

08.45 - 09.00	Registration
09.00 - 09.15	Introduction & welcome (EAA)
09.15 - 09.45	Introduction to risk classification
09.45 - 10.15	From linear to generalized linear models
10.15 - 10.45	Poisson regression for claim counts
10.45 - 11.00	Coffee Break
11.00 - 12.30	Business game: developing the new technical tariff for frequency
12.30 - 13.30	Lunch
13.30 - 14.00	Gamma regression for attritional claims
14.00 - 14.30	Extreme value theory for large claims modelling
14.30 - 15.15	Business game: developing the new technical tariff for cost
15.15 - 15.30	Coffee Break
15.30 - 16.15	Business game: developing the new commercial tariff for my company
16.15 - 17.00	Other practical difficulties with GLM
approx. 18.30	Dinner

Day 2, 20 March 2018

09.00 - 10.30	Inclusion of commercial and capital constraints in final pricing
10.30 - 10.45	Coffee Break
10.45 - 12.15	Business game: inclusion of competition analysis and policyholder behaviour for reviewing my commercial tariff
12.15 - 13.15	Lunch
13.15 - 14.15	Modelling continuous explanatory variables with Generalised additive models
14.15 - 15.00	Introduction to machine learning techniques for pricing
15.00 - 15.10	Results of the business game
15.10 - 15.15	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.

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 electronic invoice via email. Please allow a few days for handling.

Your early-bird registration fee is € 790.00 plus 24 % VAT until 31 January 2018. After this date the fee will be € 970.00 plus 24 % VAT.

Venue & Accommodation

The seminar will take place in Athens, Greece:

Electra Palace Hotel Athens

18-20, N. Nokodimou str

10557 Athens, Greece

Phone: +30 210 3370000

www.electrahotels.gr

We have arranged special prices for accommodation. The special rate is 140 € per night in a classic single room including breakfast and VAT. It is valid for bookings by 25 February 2018 out of our allotment "EAA Seminar". Our allotment includes a limited number of rooms. Kindly book your accommodation directly with the hotel using this booking form 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:	11 points
Belgium:	11 points
Bulgaria:	12 points
Czech Republic:	2-3 points (individual accreditation)
Estonia:	11 hours
Germany:	12 hours
Hungary:	12 hours

Italy: approx.	4 credits (GdLA individual accreditation)
Netherlands:	approx. 11 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.