



Risk, Capital Modelling and Solvency II

Radisson SAS Royal Hotel, Copenhagen
Tuesday 29th April 2008

Draft Program

TIME	PRESENTATION
09:30	Registration
10:00 – 10:30	Introduction
10:30 – 11:00	A Brief History of Risk <i>Andrzej Czernuszewicz – Partner, EMB UK</i>
11:00 – 11:15	Coffee break
11:15 – 12:00	The Role of Internal Models in Solvency II <i>Andrew McGuinness – Senior Consultant, EMB UK</i>
12:00 – 13:00	Lunch
13:00 – 15:00	Modelling for Insurers and Reinsurers: A presentation of “best practice” <i>Peter England – Director, EMB UK</i> <i>Andrew McGuinness – Senior Consultant, EMB UK</i>
15:00 – 15:15	Coffee break
15:15 – 16:00	Case Study: Gjensidige Insurance
16:00 – 16:45	Business Benefits of Capital Modelling <i>Mike Brockman – Founding Partner, EMB UK</i>
16:45 – 17:00	Summary, Questions and Answers

Admission is free.

You can register by sending an email to info@emb-nordic.com

Information about the speakers

Michael Brockman BSc, FIA – Partner



Mike has over 25 years experience in actuarial aspects of general insurance and has dealt with most classes of business commonly written. He has extensive experience in personal lines insurance and is the UK's leading expert on motor insurance.

Mike graduated from the University of Wales, Aberystwyth in 1979 where he read statistics and economics, obtaining a First Class Honours degree. After university, Mike spent 7 years working for a major UK insurance company, 5 years within their general insurance branch. In 1986, Mike then joined a leading actuarial consultancy and was instrumental in developing their personal lines practice.

He left as a partner in 1993, to become a founding partner of EMB Consultancy LLP. EMB now employs more than 140 people in the UK and has overseas branches in Germany, France, Scandinavia, North America, India, South Korea, South Africa and Australia, and is the largest independent non-life actuarial practice in the UK.

Mike is a regular speaker at seminars and conferences, both in the UK and overseas. He has written many articles and published papers on the subject of motor insurance and other insurance related topics. He has also been instrumental in several high profile industry initiatives including the ABI / IUA sponsored UK Bodily Injury Study. He is also co-author of the influential paper Statistical Motor Rating published by the Institute of Actuaries in 1992.

Papers Published

- Brockman, Murphy & Lee (2000). Using GLMs to Build Dynamic Pricing Systems. Written by three EMB partners, this paper explains how a dynamic pricing system can be built for personal lines business, whereby profit loads and risk premiums can be tailored to the individual behavioural characteristics of the customer.
- Brockman & Wright (1992). Use of GLMs in Statistical Motor Rating. The paper gives details of statistical modelling techniques which can be used to estimate risk and office premiums from past claims data. The methods described allow premiums to be estimated for any combination of rating factors, and produce standard errors of the risk premium.

Andrzej Czernuszewicz FIA, PhD – Partner



Andrzej has a first class honours degree and Ph.D. in mathematics from Cambridge University. After University, Andrzej began his actuarial career in the insurance division of a firm of consulting actuaries. Prior to joining EMB Consultancy LLP in 2000, he was Senior Actuary and one of the founder members of the Market Risk Unit at Lloyd's. Andrzej was promoted to partner at EMB in 2002.

Andrzej designed EMB's financial risk modelling software Igloo Professional and has extensive experience of capital setting and allocation, financial modelling, strategic planning and risk management.

Peter England PhD CStat – Director



Peter graduated from City University with a BSc and PhD in Actuarial Science. After completing his PhD, entitled "Statistical Modelling of Excess Mortality of Medically Impaired Insured Lives", Peter worked as a medical statistician at the London School of Hygiene and Tropical Medicine, conducting research into risk factors associated with Sudden Infant Death Syndrome (SIDS/Cot Death) and lecturing to post-graduate

students in Medical Statistics.

Peter then returned to actuarial work, within the Group Non-Life Technical Department at Commercial Union (now Aviva), supporting the Executive Directors in worldwide reserve monitoring, business plan monitoring, and outwards catastrophe reinsurance modelling, amongst other activities.

Peter then moved to Lloyd's as "Manager, Capital Modelling" in the Market Risk Unit, where he was jointly responsible for the Risk Based Capital system used for setting member capital requirements at Lloyd's.

After working at Lloyd's, Peter joined EMB in November 1999, specialising in research and statistical modelling, particularly financial risk modelling using simulation techniques. His main areas of work are:

- Risk based capital modelling
- Reserve variability methodologies
- Liability model parameterisation, including parameter uncertainty
- Catastrophe risk aggregation and reinsurance modelling
- Asbestos liability modelling
- Pricing using simulation techniques
- Generalised linear and non-linear modelling techniques

Peter is also involved in the development of EMB software, staff and client training, and is a regular speaker at seminars.

He is a Chartered Statistician, a Senior Visiting Fellow at the Cass Business School, London, and is the author (or co-author) of numerous papers, including the prize-winning Institute of Actuaries paper "Stochastic Claims Reserving in General Insurance".

Papers Published

Peter England has written a number of industry leading papers on the subjects of bootstrapping and stochastic claims reserving. These include:

- England, PD and Verrall, RJ (2006). Predictive distributions of outstanding claims in general insurance, *Annals of Actuarial Science*, 1, II
- Verrall, RJ and England, PD (2005). Incorporating expert opinion into a stochastic model for the chain-ladder technique. *Insurance: Mathematics and Economics*, 37
- England, PD and Verrall, RJ (2002). Stochastic Claims Reserving in General Insurance (with discussion), *British Actuarial Journal* 8, III
 - This won an Institute of Actuaries (UK) prize
 - This was recently translated into Japanese
- England, P (2002). Addendum to "Analytic and bootstrap estimates of prediction errors in claims reserving", *Insurance: Mathematics and Economics* 31
- England, PD and Verrall, RJ (2001). A Flexible Framework for Stochastic Claims Reserving. *Proceedings of the Casualty Actuarial Society*, LXXXVIII, I
- Verrall, RJ and England, PD (2000). Comments on: "A comparison of stochastic models that reproduce chain-ladder reserve estimates", by Mack and Venter. *Insurance: Mathematics And Economics*, 26
- England, P and Verrall, R (1999). Analytic and bootstrap estimates of prediction errors in claims reserving, *Insurance: Mathematics and Economics* 25

Andrew McGuinness – Senior Consultant



Andrew McGuinness has a mathematics degree from the University of Cambridge, and qualified as an actuary in 2007. He joined EMB after graduating in 2002 and is based in the Cambridge office.

Andrew has a wide range of modelling experience and is a specialist in EMB's industry-leading software products Igloo and ExtrEMB. He has implemented models for a number of enterprises, ranging from large Bermudian reinsurers to small Lloyd's syndicates; from vast multi-year models with quarterly projection, to single period models with intricate representations of catastrophe exposure and highly complex reinsurance programmes; and for a variety of purposes: including regulatory capital, long-term forecasting and business planning. He also has experience of economic scenario and asset modelling, and London market reserving. He has been heavily involved in the training and ongoing support EMB provides to users of Igloo and ExtrEMB.

Andrew maintains involvement with the ongoing research and development carried out at EMB's Cambridge office, with interests in multivariate Monte-Carlo techniques. His team is responsible for the development and maintenance of the Igloo and ExtrEMB system libraries, which provide clients with ready-built, efficient solutions to common modelling and parameterisation situations. The team is also leading EMB's research into the new Solvency II regime, and maintain EMB's Solvency II web portal www.solvency-2.com.