

WARSAW ACTUARIAL SUMMER SCHOOL
19TH EDITION
FACULTY OF ECONOMIC SCIENCES, UNIVERSITY OF WARSAW
11-19 SEPTEMBER 2008

THE DAILY SCHEDULE OF CLASSES:

Lectures Monday - Friday	
8.40-11.30	classes
11.30-12.00	break
12.00-13.50	classes

Between 8.40-11.30 and 12-13.50 short 10-minute breaks every 50 minutes are included.

PROGRAMME OVERVIEW:

11-12 September:

- **Course 1: Stochastic Claims Reserving (10 h), Dr. Thomas Mack, former chief actuary at Munich Re, Munich**

Content:

1. Basics
2. Incremental Loss Ratio Method
3. Chain Ladder Method
4. Checking and Improving the Models
5. Munich Chain Ladder Method
6. Bornhuetter/Ferguson Method
7. Cross-Classified Methods
8. Credibility Methods
9. Conclusions, References

The actuarial techniques of claims reserving are not only needed for the annual statement and internal profitability analyses but also for tariff calculations and risk modelling (Solvency II). Especially for discussions with auditors and rating agencies as well as for the construction of an internal risk model, a good understanding of the variability of the claims estimates is of high importance. The seminar reviews the main reserving methods on the basis of their underlying stochastic model. This makes it possible to better understand the methods, to analyse their implications, to check

whether a method fits the data and to calculate the variability of the reserve estimates (prediction error, range). Examples and formulae for the prediction error are derived. The material contains also quite some unpublished work. Participants should have at least a basic knowledge of Probability Calculus and Statistics. More advanced techniques are used, too, but will be shortly introduced. A realistic impression of the level of presentation can be gained from one of the following references:

Mack, Th. (1993): Distribution-free Calculation of the Standard Error of Chain Ladder Reserve Estimates. ASTIN Bulletin 23, 213-225. (*advanced*)
<http://www.casact.org/library/astin/vol23no2/213.pdf>

Mack, Th. (1994): Measuring the Variability of Chain Ladder Reserve Estimates. CAS Spring Forum 1994, 101-182. (*basic*)
<http://www.casact.org/pubs/forum/94spforum/94spf101.pdf>

Mack, Th. (2000): Credible Claims Reserves: The Benktander Method. ASTIN Bulletin 30, 333-347. (*advanced*)
<http://www.casact.org/library/astin/vol30no2/333.pdf>

Mack, Th. (2006): Parameter Estimation for Bornhuetter/Ferguson. CAS Fall Forum 2006, 141-157. (*basic*)
<http://www.casact.org/pubs/forum/06ffforum/145.pdf>

15-17 September:

- **Course 2: Role of ERM (Enterprise Risk Management) (15 h), Tom Veerman Msc AAG RBA, Franek Gregorkiewicz Msc, Johan Voortman Msc FRM, Triple A Risk Finance**

Over the past years, CEIOPS (representing European regulators) has been developing a new risk-based solvency system (Solvency II) with an available capital measured on a market consistent basis and capital requirements based on a value at risk measure. The new system assumes 3 pillars where there is a place for a new management role in the decision making process using risk measures. Also, at the end of 2005, rating agencies have added a new criterion "ERM" when deriving the credit rating for insurance companies. ERM classifications are excellent, strong, adequate and weak. Only very few insurance companies obtained the status "excellent" and most were "adequate". This means that for many companies there is plenty of room for improvement in their risk management processes.

In order to comply with the new requirements issued by regulators and rating agencies, many insurers have invested significant resources in ERM recently. In our session we want to describe the different ERM criteria and explain why and how insurance companies should invest in risk management activities. We will give best practise examples of valuable risk management analyses. Part of our session will also include a workshop that focuses on decision making of management at a life or non-life insurance

company. Here we will show how risk management information can help when it comes to important strategic decisions.

The target of our session is not only to inform participants about the upcoming importance of Enterprise Risk Management within insurance companies, but also to provide practical guidance to effectively implement ERM in different areas.

18-19 September:

- **Course 3: Variable Annuities (10 h), Paola Luraschi, Paul Ernest, Beata Gołembiecka, Milliman**

Scope of the lecture:

1. Existing products with guarantees
2. What are variable annuity guarantees
3. Types and key features of VA guarantees.
4. VA – history in US and internationally
5. Existing VA products in Europe.
6. Latest product development trends
7. Sales and marketing considerations
8. Managing the guarantees
9. Cost of guarantees.
10. Pricing the guarantees
11. Overview of dynamic hedging
12. Alternative risk management approaches: eg. partnership with a third party offering the VA guarantees
13. Overview of the practical/IT issues