

## **Seminar „Topics in Insurance and Risk Management“**

- 1) Annuity Behavior: Tax Incentives vs. Product Design
- 2) Artificial Intelligence: Implications for Social Inflation and Insurance
- 3) The Value of Enterprise Risk Management
- 4) Systemic Risk in the Insurance Sector: A Review and Directions for Future Research
- 5) What Transaction Costs are Acceptable in Life Insurance Products from the Policyholders' Viewpoint?

## 1) **Annuity Behavior: Tax Incentives vs. Product Design**

*Ansprechpartnerin:* Sarah Krömer

*Literaturhinweis:*

Kling, A., Richter, A., Ruß, J. (2014). Annuity Behavior: Tax Incentives vs. Product Design. *Astin Bulletin*, 44(3), 535-558.

*Abstract:*

We analyze and compare the impact of tax incentives and of introducing enhanced annuities on annuity behavior considering heterogeneity among the insured. We find that tax incentives for annuity result in a significant increase of the portion of people who should annuitize and also an increase of the insurer's profit since less healthy individuals also annuitize, i.e. adverse selection is reduced. However, the problem that different insured receive a different value for money is even increased by tax incentives. If enhanced annuities are introduced, the percentage of insured who should annuitize further increases. Adverse selection is further reduced and the differences in value for money from annuitizing shrink.

## 2) **Artificial Intelligence: Implications for Social Inflation and Insurance**

*Ansprechpartnerin:* Katrin Osterrieder

*Literaturhinweis:*

Kelley, K. H., Fontanetta, L. M., Heintzman, M., Pereira, N. (2018). Artificial Intelligence: Implications for Social Inflation and Insurance. *Risk Management and Insurance Review*, 21(3), 373-387.

*Abstract:*

Artificial intelligence (AI) has the ability to enhance the insurance industry's value chain by altering relationships, reinventing business platforms, and expanding hidden data. Insurance companies will apply AI to greatly enhance large data analytics, evolve algorithms with transactional data faster, and combine data in new ways to discover better underwriting risks and appropriately price the risk of various insureds based on the true value of their business risks. This article explores how AI will have a significant impact on the workforce, jobs, and furthermore how the elimination of jobs will potentially exacerbate social equality gaps on a

global scale, leading to a shift in culture and increased social inflation, thus impacting the insurance industry as well as its customers.

### **3) The Value of Enterprise Risk Management**

*Ansprechpartnerin:* Madeline Schubert

*Literaturhinweis:*

Hoyt, R. E. & Liebenberg, A. P. (2011). The Value of Enterprise Risk Management. *The Journal of Risk and Insurance*, 78(4), 795-822.

*Abstract:*

Enterprise risk management (ERM) has been the topic of increased media attention in recent years. The objective of this study is to measure the extent to which specific firms have implemented ERM programs and, then, to assess the value implications of these programs. We focus our attention in this study on U.S. insurers in order to control for differences that might arise from regulatory and market differences across industries. We simultaneously model the determinants of ERM and the effect of ERM on firm value. We estimate the effect of ERM on Tobin's Q, a standard proxy for firm value. We find a positive relation between firm value and the use of ERM. The ERM premium of roughly 20 percent is statistically and economically significant.

### **4) Systemic Risk in the Insurance Sector: A Review and Directions for Future Research**

*Ansprechpartner:* Philipp Reichel

*Literaturhinweis:*

Eling, M., & Pankoke, D. A. (2016): Systemic Risk in the Insurance Sector: A Review and Directions for Future Research. *Risk Management and Insurance Review*, 19(2), 249-284.

*Abstract:*

This article reviews the extant research on systemic risk in the insurance sector and outlines new areas of research in this field. We summarize and classify 48 theoretical and empirical research papers from both academia and practitioner organizations. The survey reveals that traditional insurance activity in the life, nonlife, and reinsurance sectors neither contributes to systemic risk nor increases insurers' vulnerability to impairments of the financial system. However, nontraditional activities (e.g., credit default swap underwriting) might increase

vulnerability, and life insurers might be more vulnerable than nonlife insurers due to higher leverage. Whether nontraditional activities also contribute to systemic risk is not entirely clear; however, the activities with the potential to contribute to systemic risk include underwriting financial derivatives and providing financial guarantees. This article is not only likely of interest to academics but also highly relevant for the industry, regulators, and policymakers.

### 5) What transaction costs are acceptable in life insurance products from the policyholders' viewpoint?

*Ansprechpartner:* Maximilian Bär

*Literaturhinweis:*

Schmeiser, H. & Wagner, J. (2016). What Transaction Costs are Acceptable in Life Insurance Products from the Policyholders' Viewpoint?. *The Journal of Risk Finance*, 17(3), 277-294.

*Abstract:*

**Purpose** – The purpose of this paper is to analyze what transaction costs are acceptable for customers in different investments. In this study, two life insurance contracts, a mutual fund and a risk-free investment, as alternative investment forms are considered. The first two products under scrutiny are a life insurance investment with a point-to-point capital guarantee and a participating contract with an annual interest rate guarantee and participation in the insurer's surplus. The policyholder assesses the various investment opportunities using different utility measures. For selected types of risk profiles, the utility position and the investor's preference for the various investments are assessed. Based on this analysis, the authors study which cost levels can make all of the products equally rewarding for the investor.

**Design/methodology/approach** – The paper notes the risk-neutral valuation calibration using empirical data utility and performance measurement dynamics underlying: geometric Brownian motion numerical examples via Monte Carlo simulation.

**Findings** – In the first step, the financial performance of the various saving opportunities under different assumptions of the investor's utility measurement is studied. In the second step, the authors calculate the level of transaction costs that are allowed in the various products to make all of the investment opportunities equally rewarding from the investor's point of view. A comparison of these results with transaction costs that are common in the market

shows that insurance companies must be careful with respect to the level of transaction costs that they pass on to their customers to provide attractive payoff distributions.

**Originality/value** – To the best of the authors' knowledge, their research question – i.e. which transaction costs for life insurance products would be acceptable from the customer's point of view – has not been studied in the above described context so far.