

2nd European Actuarial Actuarial Journal (EAJ) Conference, TU Vienna,
Austria, September 10-12, 2014

Optimal proportional reinsurance for a risk model with dependent classes of insurance business

Kam Chuen Yuen

*Department of Statistics and Actuarial Science,
The University of Hong Kong, Pokfulam Road, Hong Kong*

Abstract

This research extends the work of Liang and Yuen (2014) [Liang, Z. and Yuen, K.C. (2014). Optimal dynamic reinsurance with dependent risks: variance premium principle. *Scandinavian Actuarial Journal*, DOI: 10.1080/03461238.2014.892899]. Under the expected value premium principle, we consider the optimal proportional reinsurance strategy for a risk model with dependent classes of insurance business. Specifically, we derive closed-form expressions for the optimal strategy and value function by maximizing the expected exponential utility, and present a numerical example to illustrate the impact of a model parameter on the optimal strategy.

This is a joint work with Prof. Zhibin Liang at School of Mathematical Sciences, Nanjing Normal University, Jiangsu 210023, P. R. China, and Prof. Ming Zhou at China Institute for Actuarial Science, Central University of Finance and Economics, Beijing 100081, China.

Acknowledgements: The research of Kam Chuen Yuen was supported by a grant from the Research Grants Council of the Hong Kong Special Administrative Region, China (Project No. HKU 7057/13P), and the CAE 2013 research grant from the Society of Actuaries.