

19th International Congress on
Insurance: Mathematics and Economics (IME) 2015
Abstract Submission

Title: The Optimal Insurance under Disappointment Theories

Authors:

1. Dr. K. C. CHEUNG

- (a) Affiliation: Department of Statistics and Actuarial Science, The University of Hong Kong, Pokfulam, Hong Kong
- (b) Postal address: Room 219, Run Run Shaw Building, The University of Hong Kong, Pokfulam Road, Hong Kong
- (c) Email address: kccg@hku.hk
- (d) Telephone number: +852 39171987

2. Mr. W. F. CHONG

- (a) Affiliations: (i) Department of Statistics and Actuarial Science, The University of Hong Kong, Pokfulam, Hong Kong; (ii) Department of Mathematics, King's College London, WC2R 2LS, United Kingdom
- (b) Postal address: Room 114, Run Run Shaw Building, The University of Hong Kong, Pokfulam Road, Hong Kong
- (c) Email addresses: alfredcwf@hku.hk, wing_fung.chong@kcl.ac.uk
- (d) Telephone number: +852 39178150

3. Prof. S. C. P. YAM

- (a) Affiliation: Department of Statistics, The Chinese University of Hong Kong, Shatin, NT, Hong Kong
- (b) Postal address: Room G19, Lady Shaw Building, The Chinese University of Hong Kong, Shatin, NT, Hong Kong
- (c) Email address: scpyam@sta.cuhk.edu.hk
- (d) Telephone number: +852 39437941

Corresponding IME session speaker: Mr. W. F. CHONG

Abstract: In his celebrated work, Arrow (1974) was the first to discover the optimality of deductible insurance under the Expected Utility Theory; recently, Kaluszka and Okolewski (2008) extended Arrow's result by generalizing the premium constraint as a convex combination of the expected value and the supremum of an insurance indemnity, with single layer insurance as the optimal solution. Nevertheless, the Expected Utility Theory has constantly been criticized for its failure in capturing the actual human decision making, and its shortcoming motivates the recent development of behavioral economics and finance, such as the Disappointment Theory; this theory was first developed by (1) Bell (1985), and Loomes and Sugden (1986), that can successfully explain the Allais Paradox. Their theory was later enhanced to the (2) Disappointment Aversion Theory by Gul (1991), and then (3) Disappointment Theory without prior expectation by Cillo and Delquié (2006). In our present paper, we extend the problem studied by Kaluszka and Okolewski (2008) over the three mentioned disappointment models, while the solutions are still absent in the literature. We also conclude with the uniform optimality of the class of single layer indemnities in all these models.

Keywords: Optimal insurance; deductible insurance; single layer indemnity; Disappointment Theories.