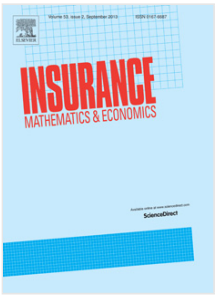

Confidence band for expectation dependence with applications

Xu Guo, Jingyuan Li

PII: S0167-6687(15)30138-4
DOI: http://dx.doi.org/10.1016/j.insmatheco.2015.09.012
Reference: INSUMA 2138

To appear in: *Insurance: Mathematics and Economics*

Received date: July 2015
Revised date: September 2015
Accepted date: 29 September 2015

Please cite this article as: Guo, X., Li, J., Confidence band for expectation dependence with applications. *Insurance: Mathematics and Economics* (2015), http://dx.doi.org/10.1016/j.insmatheco.2015.09.012

Confidence Band for Expectation Dependence with Applications

Xu Guo[1,2] and Jingyuan Li[3] *

[1] *College of Economics and Management, Nanjing University of Aeronautics and Astronautics, Nanjing*

[2] *Research Centre for Soft Energy Science, Nanjing University of Aeronautics and Astronautics, Nanjing*

[3] *Department of Finance and Insurance, Lingnan University, Hong Kong*

September 29, 2015

Abstract

Motivated by the applications of the concept of expectation dependence in economics and finance, we propose a method to construct uniform confidence band for expectation dependence. It is derived based on Hoeffding's inequality. Our proposed confidence band can be explicitly expressed and thus it is very easy to implement. Our method has applications to demand for a risky asset and first-order risk aversion problems. Simulations suggest our proposed confidence interval can control the coverage probabilities very well, and the average lengths are very short. Two empirical applications are presented to illustrate the usefulness of the constructed confidence band of expectation dependence.

Key words: Expectation dependence; Confidence band estimation; Demand for a risky asset; First-order risk aversion.

JEL classification: C14, C13, D81

*Corresponding author: Jingyuan Li; Email: jingyuanli@ln.edu.hk. The authors are grateful to the Editor and anonymous referee for constructive comments and suggestions that led significant improvement of an early manuscript. The research described here was supported by the Fundamental Research Funds for the Central Universities (NR2015001); the Natural Science Foundation of Jiangsu Province, China, grant No. BK20150732; General Research Fund of the Hong Kong Research Grants Council under Research Project No. LU13500814; the Faculty Research Grant of Lingnan University under Research Project No. DR12A9; Direct Grant for Research of Lingnan University under Research Project No. DR13C8.