Mathematics > Statistics Theory

Coupled risk measures and their empirical estimation when losses follow heavy-tailed distributions

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Considerable literature has been devoted to developing statistical inferential results for risk measures, especially for those that are of the form of L-functionals. However, practical and theoretical considerations have highlighted quite a number of risk measures that are of the form of ratios, or even more complex combinations, of two L-functionals. In the present paper we call such combinations `coupled risk measures' and develop a statistical inferential theory for them when losses follow heavy-tailed distributions. Our theory implies -at a stroke- statistical inferential results for absolute and relative distortion risk measures, weighted premium calculation principles, as well as for many indices of economic inequality that have appeared in the econometric literature.

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