

Reduction of Value-at-Risk bounds via independence and variance information

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Abstract

We derive lower and upper bounds for the Value-at-Risk of a portfolio of losses when the marginal distributions are known and independence among (some) subgroups of the marginal components is assumed. We provide several actuarial examples showing that the newly proposed bounds strongly improve those available in the literature that are based on the sole knowledge of the marginal distributions. When the variance of the joint portfolio loss is small enough, further improvements can be obtained.

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