Portfolio-relative distortion risk measures

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Abstract

A distortion-type risk measure is constructed, which evaluates the risk of a position in relation to the portfolio that the position belongs to. This allows a threefold interpretation: It can be viewed (i) as a mechanism for determining sensitivities of risk capital allocation and performance measurement to the re-balancing of portfolios; (ii) as a technique for constructing risk measures with a flexible set of properties reflecting underlying dependence structures; and (iii) as a method of risk assessment in the presence of unhedgeable risk. The properties of the risk measure are discussed, with the case of risks following joint-elliptical distributions being examined in detail.

Keywords: Risk measures, Capital allocation, Distortion premium principle, Elliptical distributions, Risk management.

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