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Quantile-based Deviation Measures.

Quantile-based deviation measures as a class of general deviation measures, defined by Rockafellar et al., have been introduced, and the main properties of this class have been studied. This class has been shown to include all lower semicontinuous law-invariant deviation measures on atomless probability spaces. Under the condition of equal means for random variables to be ordered, quantile-based deviation measures have been shown to be consistent with second-order stochastic dominance. For the class of quantile-based deviation measures, classical Chebyshev's inequality has been generalized, and for the well-known deviation measures from this class, e.g., mean absolute deviation, lower semideviation and conditional value-at-risk deviation, Chebyshev's inequalities have been obtained in explicit form. (Received February 27, 2007)