混合椭球分布下证券组合的尾部条件方差

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Tail Conditional Variance of Portfolio with Mixture of Elliptically Distributions

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- 摘要
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摘要 由于风险价值、条件风险价值等下方风险度量没有考虑尾部数据的变异性,因此在刻画极端金融风险方面存在一定的缺陷。为了更好地控制尾部极端损失的发生概率,我们选择用尾部条件方差来刻画这种极端风险,即超过风险价值的那部分损失的方差。考虑到混合椭球分布在金融数据建模中的重要性,本文在这类分布下研究了证券组合的尾部条件方差,得到了证券组合尾部条件方差风险的精确表达式,为了验证本文的结果,我们也进行了一些数值计算及在最优投资组合方面的应用研究。

关键词： 证券组合　 风险度量　 尾部条件方差　 混合椭球分布

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Abstract： Since downside risk measures such as VaR and CVaR have flaws in characterizing the variance of tail data and measuring extreme financial risk, the tail conditional variance, the variance of loss beyond VaR, motivated by tail conditional expectation is studied in this paper. The explicit solution of the tail conditional variance of portfolio under a mixture of multivariate elliptically distributions and an important heavy tail distribution in modeling financial data are obtained. Some numerical examples and empirical application on the optimal portfolio selection are finally provided to illustrate the proposed method. The results can help investors to better control extreme portfolio risk.

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