论文

基于SV-SGED模型的动态VaR测度研究

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Study on Dynamic VaR Measures Based on SV-SGED Model

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- 摘要
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摘要 本文针对金融资产收益展现出"有偏"及"厚尾"分布特征，引入有偏广义误差分布（SGED）来描述资产收益，继而提出SV-SGED模型对资产收益波动率建模，并以此来测度动态风险值（VaR），进而采用后验测试技术对风险测度模型的精确性进行检验。同时，为了估计SV模型的参数，提出基于有效重要性抽样（EIS）技巧的极大似然（ML）估计方法。最后，给出了基于上证综合指数的实证研究。结果表明，SV-SGED模型比正态分布假定下的SV（SV-N）和广义误差分布假定下的SV（SV-GED）模型具有更好的波动率描述能力，SV-SGED模型展现出比SV-N和SV-GED模型更优越的风险测度能力。

关键词： VaR SV模型 有偏广义误差分布 有效重要性抽样 极大似然估计

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Abstract： In this paper, skewed generalized error distribution (SGED) is introduced to account for skewed and heavy-tailed financial asset returns, and SV-SGED model is proposed to model asset return volatility, and then dynamic value-at-risk (VaR) can be measured. In order to test the accuracy of risk models, the back-testing technique is adopted. At the same time, a method for maximum likelihood (ML) estimation of SV models is introduced based on the efficient importance sampling (EIS) technique. Finally, an empirical study of Shanghai Stock Exchange composite index is presented. Empirical results demonstrate that the SV-SGED model can describe asset return volatility better than the SV model based on normal distribution (SV-N) and the SV model based on generalized error distribution (SV-GED), and the SV-SGED model can yield more accurate VaR estimates than the SV-N and SV-GED models.

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