中国管理科学 2015, **Vol. 23** Issue (6) :32-40

论文

上证综指的股指波动:基于模糊FEGARCH模型及不同分布假设的预测研究

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The Shanghai Stock Index Volatility:Forecasting Research Based on Fuzzy FEGARCH Model and Different Distribution Hypothesis

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- 摘要
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摘要 本文主要对2006年至2011年上证综指收益率序列的高频波动性进行预测研究。首先,针对金融数据的非线性和不确定等特性,借助模糊逻辑系统,提出一种新的金融市场波动率的预测方法-模糊FEGARCH模型,用来更好的针对具有非线性特性的收益率数据进行预测。其次,为了判断分布型模型和不对称型模型对预测精度的影响程度,分别采用分布型(GARCH-N,GARCH-t,GARCH-HT和GARCH-SGT)和不对称型(GJR-GARCH、EGARCH和模糊FEGARCH)的波动模型进行高级能力预测法(SPA)检测。实证结果表明,不对称模型对波动率预测的影响程度比分布假设的确定更为重要,而且模糊FEGARCH模型对于具有尖峰厚尾、高偏度和杠杆效应的非线性波动数据的预测能力更佳,说明了该模型的有效性与实用性。

关键词： 波动性 模糊FEGARCH模型 预测 SPA检验

Abstract： In general, the transmission of volatility in the stock market is time-varying, nonlinear, and asymmetric with respect to both positive and negative results. Given this fact, the method of fuzzy logic systems is adopted to modify the threshold values for an EGARCH model.The volatility forecasting for the SSEC stock index series from 2006 to 2011 is provided and the essential source of performance improvements is identified between distributional assumption and volatility specification suing distribution-type (GARCH-N,GARCH-t,GARCH-HT and GARCH-SGT)and asymmetry-type(GJR-GARCH and EGARCH) volatility models through the superior predictive ability test. Such evidence strongly demonstrates that modeling asymmetric components which is the fuzzy EGARCH model is more important than specifying error distribution for improving volatility forecasts of financial returns in the presence of fat-tails,leptokurtosis, skewness, leverage effects and nonlinear effects in china stock market.

收稿日期: 2013-07-15;

基金资助:

国家自然科学基金资助项目(71101041)

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引用本文:

.上证综指的股指波动:基于模糊FEGARCH模型及不同分布假设的预测研究[J] 中国管理科学, 2015,V23(6): 32-40

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