

双长记忆GARCH族模型的预测能力比较研究——基于沪深股市数据的实证分析

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Comparative Research on Forecast Ability of Double-Long-Memory GARCH Family Models ——Empirical Analysis of Shanghai and Shenzhen Stock Markets

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摘要 GARCH族模型在金融风险的度量中有着广泛的应用。在考虑股市收益率和波动率序列双长记忆性的基础上,基于上证综合指数和深圳成份指数的日收盘价序列,从证券投资风险量化的角度,引入受险值VaR和相对正确符号指标PCS作为模型预测误差衡量指标,比较分析了双长记忆GARCH族模型在不同分布假设情况下的拟合与预测精度。结果显示:偏 t 分布能较好描述沪深股市的厚尾特征;在较小的VaR水平下ARFIMA(2, d_1 ,0)-FIAPARCH(1, d_2 ,1)-skt模型对股市波动风险具有较强的预测能力,而ARFIMA(2, d_1 ,0)-HYGARCH(1, d_2 ,1)-skt对股市的涨跌趋势具有较强的预测能力。

关键词: VaR 长记忆 ARFIMA FIAPARCH HYGARCH

Abstract: GARCH family models have been widely used in financial risk measurement. There is double long memory characteristic in stock market. That is returns and fluctuations series of stock prices usually have long memory feature respectively. Hereby, by using Shanghai and Shenzhen stock markets returns series, double-long-memory GARCH family models with different distributions are comparative analyzed, based on the instruction of VaR computation and PCS indicator which can be used to measure investment risk and risk disgust degree respectively. As fitting and forecasting results shown, skewed t distribution can describe the "fat tail" feature of stock markets, and under the small VaR condition the ARFIMA(2, d_1 ,0)-FIAPARCH(1, d_2 ,1)-skt model show stronger forecast ability to the fluctuation risk of stock market while the ARFIMA(2, d_1 ,0)-HYGARCH(1, d_2 ,1)-skt model present stronger ability to the trends of rise and fall.

收稿日期: 2011-03-20;

基金资助:国家自然科学基金项目(70901044,60804047,71073100);中国博士后基金项目(20100480577);江苏省高校哲学社会科学基金项目(09SJB880113);江苏省高校"青蓝工程"资助项目;江苏省政府留学基金项目

引用本文:

曹广喜, 曹杰, 徐龙炳. 双长记忆GARCH族模型的预测能力比较研究——基于沪深股市数据的实证分析 [J]. 中国管理科学, 2012,V(2): 41-49

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