

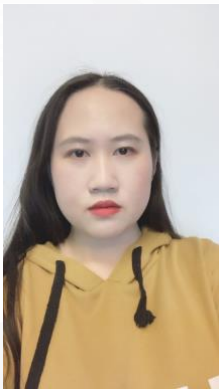
Investigation of Filter Model in FHS Methods of Calculating VaR and ES

WHEN

**April 20, 2022
11:00AM**

WHERE

Zoom Meeting

**Xiaohan Li, MS candidate**

This paper investigates the performance of filtered historical simulation approach in estimating Value-at-Risk and Expected Shortfall when applying 12 different volatility models in the filtering process on 10 different stock market indices all over the world. The 12 volatility models include 6 GARCH-type volatility models (GARCH, IGARCH, NGARCH, TGARCH, GJR-GARCH, and EGARCH), 4 stochastic volatility models (SV, SV with Student's t errors, SV with leverage, and SV with Student's t errors and leverage), and 2 realized volatility models (basic RV model and Bipower RV model). The performance of estimations is evaluated based on unconditional coverage test, independence test, conditional coverage test, and ES unconditional test. The result shows that FHS approach with GARCH-type volatility models, especially NGARCH, TGARCH, GJR-GARCH and EGARCH, outperforms FHS approach with other types of volatility models in general. And FHS approach performs better when the target probability is small.