Forecasting One-Day-Ahead Value at Risk for a Stock Portfolio

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Abstract

We compare three one-day-ahead VaR forecast methods, Delta-Normal, GARCH(1,1) with Student-t residuals, and EGARCH(1,1), on an equally weighted portfolio of SEB-A and Swedbank-A using daily data from 2010 to 2025. Forecasts are generated in a rolling 500-day window and evaluated by RMSE, tick loss, and VaR backtests (Kupiec's POF and Christoffersen's conditional coverage). Results show that GARCH and EGARCH both deliver violation rates close to the target of 10%, whereas Delta-Normal produces only around 7%. Moreover, EGARCH yields the lowest RMSE and tick loss, demonstrating its superior ability to capture time-varying and asymmetric volatility.

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