

Integrating Artificial Neural Networks for Value at Risk Calculation:

Evidence from Thai Stock Index

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ABSTRACT

We propose methods in modifying ability of Artificial Neural Networks with ARMA model, called hybrid model, to forecast index closing price and use them to estimate Value at Risk. Our methodology combines popular conditional volatility model namely GARCH by assuming normal distribution on asset returns. The data used spans through the period 2000 to 2010. Empirical results indicate that the hybrid model forecasts index closing price accurately. On the other hand, VaR obtained from forecasted index cannot cover extreme loss of return with 5% significant level. As a result, the model achieves less accurate estimation in this situation.

Key word: Neural networks, VaR estimation, Thai stock index, Hybrid model