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Comparison of Methods for Estimating the Uncertainty of Value at Risk

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Value at Risk (VaR) is a market risk measure widely used by risk managers and market regulatory authorities. There is a variety of methodologies proposed in the literature for the estimation of VaR. However, few of them get to say something about its distribution or its confidence intervals. This paper compares different methodologies for computing such intervals. Several methods, based on asymptotic normality, extreme value theory and subsample bootstrap, are used. Using Monte Carlo simulations, it is found that these approaches are only valid for high quantiles. In particular, there is a good performance for VaR (99%), in terms of coverage rates, and bad performance for VaR (95%) and VaR (90%). The results are confirmed by an empirical application for the stock market index returns of G7 countries.

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