DISTRIBUTIONAL ANALYSIS OF THE STOCKS COMPRISING THE DAX 30

M. Hoechstoetter
S. Rachev
F. Fabozzi

Abstract: In this paper, we analyze the returns of stocks comprising the German stock index DAX with respect to the α-stable distribution. We apply nonparametric estimation methods such as the Hill estimator as well as parametric estimation methods conditional on the α-stable distribution. We find for both the nonparametric and parametric estimation methods that the α-stable hypothesis cannot be rejected for the return distribution. We then employ the GARCH model; the fit of innovations modeled with an underlying α-stable distribution is compared to the fit obtained from modelling the innovations with the skew-t distribution. The α-stable distribution is found to outperform the skew-t distribution.

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