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Research Announcement

Comparing value-at-risk semi-parametric estimators from serial dependent nancial data

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Abstract

Value-at-Risk (VaR) is a most widely used tool for assessing nancial market risk. In practice the estimation of market risk by VaR generally used models assuming independence of returns. However, nancial returns tend to occur in clusters with time dependency, therefore in this paper we study the impact of negligence of returns dependency in market risk assessment. The main methods which take into account returns dependency to assess market risk are: Declustering, Extremal index and Time series-Extreme Value Theory combination. A comparison between VaR estimated under independency and under dependence assumptions shows an important reduction of the estimation error under dependency assumption. Results for simulated data show that Declustering and extremal index methods have generally the best performances. Extreme nancial risk has an impact in allocated capital to cover extreme nancial risk, an error of hypothesis induce an error in the amplitude of risk. For real data Time series-EVT combination method is the best one. According to Time series-EVT combination method an error in the choice of adequate model increases the amplitude of error by about 250%. This error has an e ect in the allocated capital to cover nancial risk.

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