Pioneer Journal of Theoretical and Applied Statistics
Volume 8, Issues 1-2, Pages 41-51 (July & October 2014)

ISSN: 2230-9837

VaR AND *CVaR* IN HIGH FREQUENCY DATA SIMULATING WITH GPD

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Received October 20, 2014

Abstract

High frequency data has some obvious features compared to low frequency data. In this paper, Generalized Pareto distribution (GPD) is introduced instead of normal distribution, thus the tail characteristics in high frequency data can be describe exactly. The tail data of Shanghai composite index is fitted with the GPD by maximum likelihood. Based on this, we calculate the tail of high frequency data and estimate the value at risk and condition value at risk through GPD, as well as check up the efficiency with bootstrap simulation and Q-Q plot. The results show that the GPD fit the tail data very well, also with the small standard errors, there is no need to back test *VaR* and *CVaR*. Thus the accuracy of measuring the Value at Risk and the Conditional Value at Risk is proved.

Keywords and phrases: *VaR*, *CVaR*, GPD, bootstrap.