ZEPPELIN UNIVERSITÄT

CHAIR OF EMPIRICAL FINANCE AND ECONOMETRICS

The devil lies in the tails
Intraday Value-at-Risk estimation for high frequency financial data
using approaches from Extreme Value Theory

Name:	Mariana Patiño
Student number:	17203223
Supervisor:	Prof. Dr. Franziska Peter
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Abstract

This paper investigates the performance of a Peaks-Over-Threshold Value-at-Risk forecasting method using high-frequency data on three of the most traded individual stocks of the NASDAQ stock exchange and the S&P 500 market index. In contrast to similar research papers dealing with intraday Value-at-Risk forecasting, we analysed stock returns at a 5-seconds interval. By means of a rolling window process, we perform conditional and unconditional coverage tests to asses the quality of our Value-at-Risk estimates and benchmark their quality with two conventional methods. After evaluating the number of violations, we find our proposed method to perform best in almost all scenarios. However, it was not able to account for the clustering behavior of extremal events.