



The University of Chicago
Department of Statistics

MASTER'S THESIS PRESENTATION

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**Estimation of the Tail Behavior of Mutual
Fund Returns : An EVT-based Approach**

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110 Eckhart Hall, 5734 S. University Avenue

ABSTRACT

This study employs the conditional EVT method developed by McNeil and Frey (2000) to investigate the tail behavior of distributions of returns on mutual funds that are assumed to exhibit volatility clustering as usually observed in financial time series. After a Monte Carlo simulation conducted to find a sufficiently high threshold necessary to use the generalized Pareto distribution for modeling extreme returns, the shape parameter ξ that quantifies the heaviness of the tails is estimated for each of actively-managed equity mutual funds based on the data obtained from the CRSP Survivor-Bias-Free U.S. Mutual Fund Database. With the quintile portfolios of mutual funds formed on the magnitude of the shape parameter, annualized return and volatility are computed, and risk-adjusted excess returns are estimated as well by using well-known asset pricing models to examine a relation between the tail shape and the return performance. Even though there appears no significant linear correlation, an intriguing pattern between them is detected and later discussed.

Information about building access for persons with disabilities may be obtained in advance by calling Sandra Romero at 773.702-0541 or by email (sandra@galton.uchicago.edu).