



THE UNIVERSITY OF  
**CHICAGO**

Department of Statistics  
**MASTER'S THESIS PRESENTATION**

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**YING XI**

Department of Statistics  
The University of Chicago

**Robust Methods in Value at Risk Prediction**

**THURSDAY, November 8, 2012, at 9:00 AM**

110 Eckhart Hall, 5734 S. University Avenue

**ABSTRACT**

This paper introduces a robust method applied in the Value at Risk forecasts of a GARCH-type model in two stages. One is to use a robust M-estimator in the estimation of parametric GARCH models. And the other is to apply a robust semiparametric bootstrap method to estimate predictive return distribution and then calculate value at risk forecast. A Monte Carlo simulation shows that our method not only achieves more accurate estimate of the parametric GARCH model, but also outperforms the filtered historical sampling method in VaR prediction, when a heavy tail distribution of innovations, such as a student-t distribution, is used in the simulation.

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