



THE UNIVERSITY OF CHICAGO

Department of Statistics

MASTER'S THESIS PRESENTATION

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An Empirical Analysis in Risk Management: Comparison of Portfolio Value at Risk with Different Approaches

WEDNESDAY, November 5, 2014, at 9:00 AM
Eckhart 117, 5734 S. University Avenue

ABSTRACT

Value at Risk (VaR) is a very important technique for the measurement and control of market and credit risks. This paper will start with VaR definition, then focus on the introduction and evaluation of the main approaches to estimate VaR.

In this article, I pick 3 most representative equity portfolios S&P 500, FTSE 100 and NIKKEI 225 from US, Europe and Asia respectively. In order to generate daily VaR forecasts of equity portfolios, I use the exponentially weighted moving average (EWMA). Then we'll move to two main estimation approaches: Variance-Covariance method used by JP Morgan Risk Metrics and the Historical Simulation approach. Finally we use several backtesting techniques for the validation of the estimation.