



The University of Chicago
Department of Statistics

MASTER'S THESIS PRESENTATION

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**GMM Estimation Of A Stochastic Autoregressive
Volatility Model: Based On Monte Carlo Study**

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110 Eckhart Hall, 5734 S. University Avenue

ABSTRACT

Generalized method of moments (GMM) is a generic method for estimating parameters in statistical models. A primary attraction of the method of moments technique is that it is well suited for estimating volatility models without a complete parametric specification of the probability distribution, in which situation the maximum likelihood estimation (MLE) is not applicable. This paper discusses the possible uses of GMM to estimate a log-normal SARV model and implement algorithms with Monte Carlo methods. Furthermore, the paper examines a trade-off between the number of moments, or information, or precision, of the objective function used for estimation. Also, the paper discusses and compares several methods to approximate an optimal weighting matrix based on simulations.

KEY WORDS: Generalized Method of Moments (GMM), Stochastic Volatility Model, Goodness of fit, Simulation techniques, Weighting matrix.

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