The University of Chicago
Department of Statistics

MASTER'S THESIS PRESENTATION

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Application of Continuous Markov Chain in Constructing Credit Transition Matrix—MCMC with Gibbs Sampler Approach

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110 Eckhart Hall, 5734 S. University Avenue

ABSTRACT

Credit risk consists of more than half of all financial risks. So how to measure it precisely is essential in risk management. Credit transition matrix based on historical credit score data is one of the fundamental tools to measure credit risk. In this talk, I will show how to manipulate the original data into a more convenient form and reduce original states space size so as to do modeling works. Also, I will present a method featuring continuous Markov chain model with Gibbs sampling techniques to simulate possible credit score path for each bond (company). The data I use is discrete monthly S&P credit scores data with many blanks. But this continuous Markov chain model approach successfully solves the problem of data sparcity. Plus, this method is insensitive to initial conditions.

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