论文

基于MCMC稳态模拟的贝叶斯经验费率厘定信用模型

林静[1], 韩玉启[1], 朱慧明[2]

1. 南京理工大学经济管理学院, 南京, 210094;
2. 湖南大学统计学院, 长沙, 410079

Bayesian Credibility Model for Experience Rating Based on MCMC Method

LIN Jing[1], HAN Yu-qi[1], ZHU Hui-ming[2]

1. School of Economics & Management, Nanjing University of Science & Technology, Nanjing 210094, China;
2. School of Statistics, Hunan University, Changsha 410079, China

- 摘要
- 参考文献
- 相关文章

Download: PDF (KB)　　HTML (KB)　Export: BibTeX or EndNote (RIS)　　Supporting Info

摘要 Buhlmann-Straub最精确信用模型是贝叶斯分析在经验费率厘定中最著名的应用之一。但传统Buhlmann-Straub模型在先验信息不足的条件下,难以得出结构参数的无偏后验估计;长期以来,高维数值计算的困难也使得贝叶斯方法的应用受到极大的限制。本文通过对Buhlmann-Straub模型结构的剖析,引入基于Gibbs抽样的马尔可夫链蒙特卡罗(MCMC)模拟方法,构建出风险保费预测值信用估计的贝叶斯模型。实例分析的结果证明了该模型能够在数据缺失的情况下,动态模拟出有关参数的后验分布,求出缺失参数的后验估计,提高计算的精度,从而有助于更有效地甄别出各保单间的非同质程度。

关键词：　信用模型　贝叶斯分析　经验费率　马尔可夫链蒙特卡罗模拟　Gibbs抽样

Abstract： B黛lmann-Straub model is one of the most famous applications of the Bayesian method for the experience rate making.However,by the traditional B黛lmann-Straub model one cannot get the unbiased posterior estimation of the parameters when there is not sufficient prior information for the structural parameters;What's more,the difficult of computing high dimension numeration limits the application of Bayesian method.This paper introduces the Markov chain Monte Carlo simulaton method based on the Gibbs sampling after analyzing the structure of the B黛lmann-Straub model and sets up the Bayesian credibility model for estimating the predictive risk premium.Also by using the results of the numeration analysis,this paper proves that from this model one can get the posterior distributions of the parameters dynamically and the posterior estimation of the censoring parameters in the situation that exists unknown parameters,as well as improve the precision of the numeration,which can be helpful to find the heterogeneity of the premium.

引用本文:

林静, 韩玉启, 朱慧明 .基于MCMC稳态模拟的贝叶斯经验费率厘定信用模型[J] 中国管理科学, 2006,V(2): 33-38

Service

- 把本文推荐给朋友
- 加入我的书架
- 加入引用管理器
- Email Alert
- RSS

作者相关文章

- 林静
- 韩玉启
- 朱慧明

没有本文参考文献

没有找到本文相关文献