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论文

内生性回收率与信用风险度量研究

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Endogenous Recovery Rate and Credit Risk Measurement

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- 摘要
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摘要 在信用风险模型中,外生性回收率的设定会忽略回收率对损失分布尾部的影响,而且会导致潜在的模型风险。本文将因子扩散过程引入结构信用风险模型,获得了回收率和违约概率之间的内在关系,利用Monte Carlo模拟方法数值分析了预期回收率对违约概率和资产价值波动率的依赖性,结果表明预期回收率与违约率之间具有很强的负相关关系,而且这种相关关系会受到债务人资产价值波动率的正向影响。在内生性回收率下,推导了信用损失的概率分布,计算了信用风险的Credit-VaR和ETF指标。最后利用市场数据检验了内生回收率信用风险模型的有效性,结果表明该模型可以很好的描述历史违约率和回收率的变化过程。

关键词 : 内生性回收率 因子扩散过程 信用风险度量 数值模拟 实证检验

Abstract : In credit risk models, exogenous recovery rate may neglect the impact on the tail of the loss distribution, and the exogenous specify of the recovery rate leads to the possible model risk. This paper incorporates the factor diffusion process into the structure model of default, derives the inherent relation between the recovery rate and the default probability and analyzes the dependence of expected recovery rate on the expected default probability by using the MC technology. The result shows there are strong negative correlation between expected recovery rates and default probability. Furthermore, the volatility of the asset value has positive compact on the correlation. In the framework of the endogenous recovery rate, the probability distribution of the credit loss is derved, and two index, Credit VaR and ETF, which is the measurement of the credit risk are computed. Finally, the performance of the endogenous recovery rate is tested-based on credit risk model using the market data,which shows that the model can well-character the evolution of the history default probability and recovery rates.

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