Precautionary Measures for Credit Risk Management in Jump Models

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Abstract

Sustaining efficiency and stability by properly controlling the equity to asset ratio is one of the most important and difficult challenges in bank management. Banks can incur great financial losses owing to unexpected rapid decline of asset values as exemplified by recent financial crises. They need to monitor closely their net worth as well as the market conditions, and one of their important concerns is when to undertake the action of raising more capital so as to maintain the stability of their equity to asset ratios. In other words, they need to solve the tradeoff between avoiding premature undertaking and waiting too long. In this paper, we model the tradeoff in terms of some objective function as motivated by Bayes risks in sequential analysis problems and solve the corresponding optimal stopping problem. In order to model defaults in their loan/credit business portfolios, we model their net worth using Levy processes with downward jumps. Both analytical and numerical solutions are presented.

References


