

Precautionary Measures for Credit Risk Management in Jump Models

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Sustaining efficiency and stability by properly controlling the equity to asset ratio is one of the most important and difficult challenges in bank management. Due to unexpected and abrupt decline of asset values, a bank must closely monitor its net worth as well as market conditions, and one of its important concerns is when to raise more capital so as not to violate capital adequacy requirements. In this paper, we model the tradeoff between avoiding costs of delay and premature capital raising, and solve the corresponding optimal stopping problem. In order to model defaults in a bank's loan/credit business portfolios, we represent its net worth by appropriate Levy processes, and solve explicitly for the double exponential jump diffusion process. In particular, for the spectrally negative case, we generalize the formulation using the scale function, and obtain explicitly the optimal solutions for the exponential jump diffusion process.

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