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Summary: In order to better deal with the risk of the asset jump and the strategy of bankruptcy reorganization faced by the company, based on a structural method and the optimal stopping technique, this paper considers the pricing problem of the perpetual corporate debt with the bankruptcy reorganization scheme of debt-equity swap in a double jump-diffusion model. Pricing analytical solutions of the perpetual corporate debt and the equity are obtained by a differential equation method. Furthermore, this paper also presents a closed-form solution of the optimal bankruptcy boundary and a nonlinear equation satisfied by the optimal coupon. Finally, the numerical results show that the more volatile the corporate asset value is, the more shareholders can gain from the volatile market, but the more unpopular corporate bonds will be. The lower the corporate bond value is, the lower the optimal leverage ratio will be.

MSC:
91G50 Corporate finance (dividends, real options, etc.)
60J70 Applications of Brownian motions and diffusion theory (population genetics, absorption problems, etc.)
60J74 Jump processes on discrete state spaces

Keywords:
structural method; double exponential jump-diffusion model; bankruptcy reorganization; corporate debt; optimal bankruptcy boundary

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