Optimal dividend payouts for diffusions with solvency constraints. (English summary)

Finance Stoch. 7 (2003), no. 4, 457–473.

The paper is concerned with the classical problem of optimal dividend payouts. A company wants to pay some of its surplus to the shareholders as dividends. The surplus process after dividends takes the following form:

$$dY_t = a(Y_t)dt + \sigma(Y_t)dW_t - dC_t, \quad Y_0^- = y,$$

where $W$ is a Brownian motion and $a$ and $\sigma$ are Lipschitz continuous. The problem is to find a payout-scheme that maximises the expected present value of all payouts until ruin occurs.

Barrier strategies (i.e. strategies that pay dividends as long as the surplus stays above a barrier $b$) have been investigated in the past. However, in some cases such strategies pay dividends even when the value of the funds is (unacceptably) low. In this paper the problem of optimal dividend payouts is addressed under the additional assumption that no dividend payout is made unless the funds possess at least some value $b_0$. The authors prove that if $b_0 > b$, then the optimal strategy is a barrier strategy with barrier $b_0$. The authors also address the problem of determining the smallest possible $b_0$ that guarantees with positive probability that the surplus remains positive within a given time bound $T$.

References


Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.

© Copyright American Mathematical Society 2018