

Public Abstract

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Title:CLASSICAL AND IMPULSE STOCHASTIC CONTROL ON THE OPTIMIZATION OF THE DIVIDENDS FOR THE TERMINAL BANKRUPTCY MODEL AND ITS APPLICATION

In this dissertation, I discuss the optimization of dividends for reinsurance companies with considering some factors in reality, such as some money would be returned to shareholders when there is a terminal bankruptcy, meanwhile the shareholders have to pay the tax and the fixed transaction cost for each dividend. The mathematical problem I consider is to maximize the summation of expected total discounted dividends before bankruptcy and expected discounted returned money at the state of terminal bankruptcy. The purpose of this dissertation is to write out the explicit solution for the optimal value of dividends although it is very hard to realize. Moreover, in this dissertation, in convenience for the decision makers, I present optimal policies with respect to the best dividend time and the amount of dividends for each dividend time. Moreover, the best time of terminal bankruptcy is also given out in detail. Furthermore, for the case if the insurance companies can get some money for recovery at the state of bankruptcy, I also write out the optimal policy by the same method as in the case with terminal bankruptcy. In the real world, this dissertation provides a useful and strong reference for the investment policy of reinsurance companies.