

Optimal High-Risk Investment

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Abstract

We extend an investment model of Bruss and Ferguson (2002) type, where an investor observes a sequence of T investment alternatives, each endowed with a random quality characteristic. The information available at any period is the current and all prior quality characteristics and the investor has to decide whether to invest in the same period the project shows up. Finally, after the last investment alternative has shown up, those n projects with highest realized quality characteristics generate positive gross-returns which depend on their relative ranking, while the payoffs of all other projects are zero. Under these assumptions we obtain the value functions and optimal investment rules for risk-neutral or risk-averse investors. A simulation study demonstrates how optimal investment decisions are affected by the time horizon and by the attitudes towards risk. In addition, we provide sufficient conditions under that the value function is non-increasing in the number of periods T .

Keywords: Optimal stopping, High-risk investments

References

- Bruss, F. T. and Ferguson, T. S. (2002). High-risk and competitive investment models. *Ann. Appl. Probab.*, 12(4):1202–1226.

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