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An R&D Investment Game under Uncertainty in Real Option Analysis

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Abstract

One of the problems of using the financial options methodology to analyse investment decisions is that strategic considerations become extremely important. So, the theory of real option games combines two successful theories, namely real options and game theory. The value of flexibility can be valued as a real option while the competition can be analyzed with game theory.

In our model we develop an interaction between two firms that invest in R&D. The firm that invests first, defined as the Leader, acquires a first mover advantage that we assume as a higher share of market. But the R&D investments present positive externalities and so, the option exercise by the Leader generates an “Information Revelation” that benefits the Follower.

Keywords: Real Options; Exchange Options; Option games; Information Revelation.

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