# Strategic Real Options: Three Firms

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**Abstract**

Strategic real options models get more and more attention in the literature these days. In most of these models it is assumed that there are two firms holding the option to invest. From Nielsen (2002) we know that competition leads to earlier investment, i.e. the leader in the duopoly invests earlier than a monopolist. A natural question is what will happen to this result if a third firm is added to the model. In this paper the standard strategic real options model (cf. Dixit and Pindyck (1994, Chapter 9.3) and Nielsen (2002)) is extended to three firms.

It turns out that two cases can be distinguished. In the first case the three firms invest sequentially. In the second case the first and the second investments are made simultaneously. A condition is derived that states which case prevails. The region for sequential investment decreases with uncertainty. Furthermore, we show that the first investment in the three firm case can be either earlier or later than the first investment in duopoly.

## References

Dixit, A. K. and R. S. Pindyck (1994). *Investment Under Uncertainty*. Princeton University Press, Princeton, New Jersey, United States of America.

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