

FUZZY REAL OPTIONS ARE NOT FOR SISSIES

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Abstract

The theory and methods of real options have the potential to become robust and useful decision support tools for strategic investment decisions in most important industries that have an impact on global and regional economic growth. Real options methods are being positioned to replace the classical NPV-based methods as they offer more flexibility and the means to deal with systematic variety over also distant time horizons. There are however some challenges to the development of real options methods: (i) the assumptions that future cash flows can be modelled as stochastic processes; (ii) the replication of historical time series from neighbouring industries as predictors of future strategic developments, and (iii) the precision developed with real options models, may not be relevant for strategic decision making, it may even give the wrong benchmarks (as the required assumptions do not fit the real world context). We have introduced fuzzy real options theory and methods for decisions on giga investments, R&D portfolios, M&A plans and patent valuation – all of these in real world cases developed in different industries. The results are promising, as they offer robust and dynamic decision support for handling complex problems covering also distant time horizons. Fuzzy real options challenge some of the key assumptions of classical real options models and face up to the (sometimes strong) criticism from researchers favouring probability theory, stochastic processes, net present value and the belief that true scientific results should be precise. The problems to be tackled require insight and experience with large, dynamic problems with data that is uncertain, incomplete and imprecise as in most real world cases; access to the insight (built on mostly confidential data) requires that the researcher has gained the trust and respect of corporate decision makers. Hence – *fuzzy real options are not for sissies*.