

Título: Real Option Pricing with Mean-Reverting Investment and Project Value

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In this work we are concerned with valuing the option to invest in a project when the project value and the investment cost are both mean-reverting. Previous works on stochastic project and investment cost concentrate on geometric Brownian motions (GBMs) for driving the factors. However, when the project involved is linked to commodities, mean-reverting assumptions are more meaningful. Here, we introduce a model and prove that the optimal exercise strategy is not a function of the ratio of the project value to the investment V/I -- contrary to the GBM case. We also demonstrate that the limiting trigger curve as maturity approaches traces out a non-linear curve in (V,I) space and derive its explicit form. Finally, we numerically investigate the finite-Horizon problem using the Fourier space time-stepping algorithm.

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