

Assignment 5 - V703

Financial Modeling Valuation

15/02/2007

1. The purpose of this exercise is to study investment in a project where both entry and exit are considered. Take the base parameters:

$$I = 20, \quad E = 2, \quad C = 8, \quad \delta = 0.04, \quad r = 0.04, \quad T = 30, \sigma = 0.2.$$

Denoting the entry and exit thresholds by P_H and P_L , use the Excel macro developed for lecture 6 to obtain:

- (a) a graph of P_H and P_L as a functions of volatility, for σ in the interval $[0.1, 0.4]$, with increments of size 0.05.
- (b) a graph of P_H and P_L as a functions of the operating costs, for C in the interval $[0, 1]$, with increments of size 0.1
- (c) a graph of P_H and P_L as a functions of the exit cost, for E in the interval $[-5, 15]$, with increments of size 5.

2. For this exercise, consider a project where entry, mothballing, reactivation and scrapping are allowed. Take the base parameters

$$\begin{aligned} I &= 40, & E_M &= 0.2, & E_S &= -3.4, & I_R &= 0.79, \\ C &= 4.4, & E_M &= 0.515, \\ T &= 30, & \sigma &= 0.15, & r &= 0.05, & \delta &= 0.05 \end{aligned}$$

Denoting the entry, mothballing, reactivation and scrapping thresholds by P_H, P_R, P_M and P_S , use the Excel macro developed for lecture 7 to obtain:

- (a) a graph of the thresholds as a functions of the reactivation cost, for R in the interval $[0, 3.5]$, with increments of size 0.5.
- (b) a graph of the thresholds as a functions of the operating costs, for C in the interval $[2, 6]$, with increments of size 0.5
- (c) a graph of the thresholds as a functions of the mothballing sunk cost, for E_M in the interval $[0, 2.5]$, with increments of size 0.5.
- (d) a graph of the thresholds as a functions of the mothballing running cost, for M in the interval $[0, 1]$, with increments of size 0.1.
- (e) a graph of the thresholds as a functions of the volatility, for σ in the interval $[0, 0.4]$, with increments of size 0.05