HW 9 Horizon Value 2

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Passed solution review

A project involved initial construction costs of $1.75 million. After 15 years, the useful life of that construction will be over and the facility will be demolished, involving sensitive environmental protections and cleanup. You estimate that 25% of the cost of the facility represents items that could be sold for scrap at 30% of their initial construction cost. You estimate the proper demolition cost of such a facility to be $0.9M.

assuming initial costs are not recouped

a. What is the NPV of the horizon value if the real discount rate is 0.035?

$V_0 = 1.75$ million $T = 15$ $SV = .25 \cdot .3 \cdot 1.75m = .13125$ million $C = .9$

$-1.75 + .13125/1.035^{15} - .9/1.035^{15} = -2.2$ million

$HV_{15} = -(.9 - .3 \cdot 1.75/4) \cdot 1m = -768.8k$ discount = .035

$NPV = -768.8k/1.035^{15} = -458.9k$

b. If the expected annual rate of inflation is 0.02, what is the nominal horizon value in 15 years?

$-2.2(1.02)^{15} = -2.96$ million

$-768.8k \cdot 1.02^{15} = -1.034m$