HW 9 Horizon Value 3

Monday, November 9, 2020 2:35 PM

Passed solution review

A program, if implemented, will operate for 10 years for certain. Your best guess is that after year 10 and following each year thereafter there will be a 0.02 probability the program will end. Real net benefits are $25/year currently, and are expected to grow 1% per year as long as the program is in operation. The real discount rate is 3.5%. What is the NPV of the horizon value of net benefits following year 10?

$T=10 \quad f=.02 \quad NB=25 \quad g=.01 \quad r=.035$

$NB\sum_{t=1}^{\infty}\left(\frac{1-f}{1+r}\right)^t$

$\delta=(1.01\cdot.98)/1.035=.956 \rightarrow \delta/1-\delta=21.898=a$

$25(1.01)^{10}(1)=27.615$

$(25\cdot1.01^{10}\cdot a)/1.035^{10}=428.7957$

$a=21.898$