CFRM 501 - Investment Science
Homework Assignment 3

Due: October 26, 2020 - 11:59 pm

Late submissions will receive an automatic grade of zero.

Question 1: An investor with initial wealth \$1,000 has the opportunity for an investment with random return r. The return r has outcome 20% with probability 0.7, and outcome -30% with probability 0.3. What is the expected terminal wealth of the investor? If the investor has power utility with parameter $\gamma = 2$, what is the certainty equivalent of this investment opportunity? Based on this calculation, should the investor take the opportunity or simply walk away with \$1,000? What would happen to all of your calculations if the initial wealth was \$1,000,000?

Question 2: Suppose an investor has initial wealth W_0 and has the opportunity for an investment such that the end-of-period wealth is $W_1 = W_0 + H$. If the investor uses exponential utility, show that $W_C - W_0$ does not depend on W_0.

Question 3: Show that if $U_1 \sim U_2$ where both utility functions are strictly increasing, then $W_C^{(1)} = W_C^{(2)}$.

Continued Reading: Chapters 1, 2, and 3 of Asset Management by Andrew Ang must be completed before the midterm (November 9, 2020).