HOMEWORK 7. Due Monday April 13.

1. Consider an agent with income ("output" in Obstfeld-Rogoff) $Y_{1}=10, Y_{2}^{A}=25$, and $Y_{2}^{B}=0$, where A and B are states of the world with $\pi^{A}=0.4$ and $\pi^{B}=0.6$. Assume $p^{A}=p^{B}, r=10 \%$ and the discount rate is $\beta=\frac{1}{1+r}$.
a) Assume the agent has quadratic utility. Does the "PIH-relation" $C_{1}=E C_{2}$ hold?
b) Find $C_{2}^{A} / C_{2}^{B}$.
c) How many units of each Arrow-security does the agent purchase and how many units of the period 1 good? (this can be a negative number so "purchase" may mean sell.)
2. Now assume that the agent has utility function $U(C)=-\frac{1}{3} C^{-3}$.
a) Does the "PIH-relation" $C_{1}=E C_{2}$ hold?
b) What is the intuition for the answer you gave in part a)?
c) Assume $\frac{p^{A}}{p^{B}}=\frac{2}{3}$. Now find $C_{1}$ and $C_{2}^{S}$ for $S=A, B$ and check if $C_{1}=E C_{2}$.
