Homework #10

I am rewriting these homework problems. Sorry for the inconvenience. Please check back soon.

Do this too!

Suppose that the demand for real money balances is given by:

$$\frac{M}{P} = 100 - 100 \cdot \left(r + \pi^e\right) + Y \quad \text{where:} \quad \begin{cases} M = \text{quantity of money available} \\ P = \text{price level} \qquad \pi^e = \text{expected inflation rate} \\ r = \text{real interest rate} \quad Y = \text{income} \end{cases}$$

a. Assume that $Y = 50$. Graph the demand for real money balances by placing real money balances on the horizontal axis and placing the nominal interest on the vertical axis.

b. Suppose that $M = 12,000$ and $P = 100$. On the same graph, draw the supply of real money balances. What is the equilibrium nominal interest rate? If $\pi^e = 0$, what is the real interest rate?

For the remainder of the problem, assume that this value of the real interest rate corresponds to the normal rate of return on capital.

c. Now suppose that income increases to $Y = 75$, while the supply of real money balances remains unchanged. What is the new equilibrium nominal interest rate?

d. Now suppose that the Fed is unhappy with the increase in the nominal interest rate that it has just observed. If it increases the money supply to $M = 15,000$ and if the price level remains unchanged, what will the new nominal interest rate be?

Now suppose that people believe that the increase in the money supply will cause prices to rise. Specifically, the money supply has increased 25 percent, so people believe the price level will increase 25 percent (i.e. $\pi^e = 0.25$).

e. Using the value of the real interest rate that you found in part **a.** of this problem, calculate the value to which the nominal interest rate will converge.

f. If the money supply and income remain unchanged, then how will the money market converge to this value of the nominal interest rate? Do you see any interesting relationships among the values you calculated?