PROBLEM SET IV

CHP 7 #2

Equation 7.3 gives us the exact formula

$$(1 + r_t) = (1 + i_t) / (1 + \Pi_t^e)$$

$$r_t = (1 + i_t) / (1 + \Pi_t^e) - 1$$

Approximately

$$r_t \approx i_t - \Pi_t^e$$

a) With i_t=%6andΠ_t^e=%1
   exact:r_t=%4.95
   prox: r_t=%5
b) With i_t=%10andΠ_t^e=%5
   exact:r_t=%4.76
   prox: r_t=%5
c) With i_t=%50andΠ_t^e=%45
   exact:r_t=%3.45
   prox: r_t=%5

Notice that the approximation formula always gives %5, although the exact real interest rate is different in each case.

CHP 7 #5

Use formula in 7.6 in text

$$\$V_t = \$z_t^e + [1/(1+i)]\$z_{t+1}^e + [1/(1+i)^2]\$z_{t+2}^e$$

$$\$V_t = \$100{,}000 + [1/(1+i)]\$100{,}000 + [1/(1+i)^2]\$100{,}000$$

a) If i=%0, $\$V_t$=$300,000

b) If i=%5, $\$V_t$=$285,941

c) If i=%10, $\$V_t$=$273,554

CHP 7 #7

a) The LM curve shifts upward by the decrease in the expected inflation rate. Y decreases and the real interest rate rises, but the nominal interest rate decreases (because the rise in the real interest rate is smaller than the drop in expected inflation). The fall in Y and the rise in the real interest rate both cause a decrease in I. C decreases because Y decreases.

b) As before, the Lm curve shifts upward by the decrease in expected inflation. This upward shift is also a leftward shift. In addition, the LM curve shifts leftward due to the contractionary monetary policy. The combined impact of these two upward shifts is a decrease in Y and an increase in r, the real interest rate. C and I will decrease as well, since Y has dropped and r has risen. The nominal interest rate, i could rise or fall, since the change in expected inflation tends to decrease the nominal interest rate, while the contractionary monetary policy tends to increase it.

CHP 7 #8

Answers will depend on most recent data

CHP 7 #9

a)

$$\$V = \$10{,}000 + \$10{,}000(1/1.05) + \$10{,}000(1/1.05)^2 = \$28{,}594.10$$

b)

i) $V=$38,594.10
ii) $V=$57,188.21
iii) $V=$28,161.20
iv) $V=$27,355.37