ECON2113 Macroeconomics

Chapter 10 Exercises

1. Here we investigate a particular example of the model studied in this chapter with no government. Suppose the consumption function is given by $C = 100 + .8Y$, whereas investment is given by $I = 50$.
    a. What is the equilibrium level of income in this case?
    b. What is the level of saving in equilibrium?
    c. If, for some reason, output is at the level of 800, what will the level of involuntary inventory accumulation be?
    d. If I rises to 100, what will the effect be on the equilibrium income?
    e. What is the value of the multiplier, α, here?
    f. Draw a diagram indicating the equilibria in both parts a and d.

2. Suppose the consumption behavior in problem 1 changes so that $C = 100 + .9Y$, while I remains at 50.
    a. Is the equilibrium level of income higher or lower than it was in problem 1(a)? Calculate the new equilibrium level, Y', to verify this.
    b. Now suppose investment increases to $I = 100$, just as in problem 1(d). What is the new equilibrium income?
    c. Does this change in investment spending have more or less of an effect on Y than it did in problem 1? Why?
    d. Draw a diagram indicating the change in equilibrium income in this case.

3. Now we look at the role taxes play in determining equilibrium income. Suppose we have an economy described by the following functions:

C	=	$50 + .8YD$
$\bar{I}$	=	70
$\bar{G}$	=	200
$\overline{TR}$	=	100
t	=	.20

a. Calculate the equilibrium level of income and the multiplier in this model.
b. Calculate also the budget surplus, BS.
c. Suppose that t increases to .25. What is the new equilibrium income? The new multiplier?
d. Calculate the change in the budget surplus. Would you expect the change in the surplus to be more or less if $c = .9$ rather than .8?
e. Can you explain why the multiplier is 1 when $t = 1$?

4. Suppose Congress decides to reduce transfer payments (such as welfare) but to increase government purchases of goods and services by an equal amount. That is, it undertakes a change in fiscal policy such that $\Delta G = -\Delta TR$.
   a. Would you expect equilibrium income to rise or fall as a result of this change? Why? Check your answer with the following example: Suppose that, initially, $c = .8$, $t = .25$, and $Y_0 = 600$. Now let $\Delta G = 10$ and $\Delta TR = -10$.
   b. Find the change in equilibrium income, ΔY_0.
   c. What is the change in the budget surplus, ΔBS? Why has BS changed?