Problem Set 2

September 16, 2020

Due: 9-23
Blanchard Ch. 3: 9

1. Suppose the economy is described by:

   $C = 17500 + \frac{1}{2}(Y - T)$

   $I = 17500 + \frac{1}{4}Y$

   $G = 5000$

   $T = 5000$

   (a) Basic quantities:

      i. Find equilibrium Y, C, I.

      ii. What is the multiplier?

      iii. What is the level of the government budget $(T - G)$? Is the budget balanced, in deficit, or in surplus?

      iv. Suppose there is a financial crisis, and autonomous investment (b_0) falls by 1200. What are the new equilibrium quantities of Y, C, and I

   (b) Fiscal Policy Choices: Suppose Congress is considering the use of fiscal policy to address the crisis, and that you are an economist whose job is to inform policymakers of their menu of options.

      i. The policymakers are first considering using government spending alone to counter-act the crisis. They ask you: By how much would G have to increase to restore output to the pre-crisis level? At this new level of G, and what would happen to the goverment budget?

      ii. Next, they consider using tax cuts alone as stimulus to counter-act the crisis. By what amount would taxes need to fall to restore output to the pre-crisis level. At this new level of taxes, what would be the state of the government budget?

      iii. Which fiscal policy option considered above would leave the government with a larger budget deficit? What is the intuition behind this?

iv. Suppose that policymakers wanted to increase G to restore output to its pre-crisis level, but wanted to simultaneously increase T to prevent a budget deficit. By how much would G and T need to increase to restore output to the pre-crisis level?

2. Causal Investment

We have seen that one way of characterizing goods market equilibrium is that Investment = Savings. However, this equilibrium condition does not tell us whether more savings *causes* more investment, or whether more investment *causes* more savings. While most people have a good intution as to how having a greater amount of savings can lead to a larger amount of investment, it is often difficult for people to understand how having more investment could lead to a larger amount of savings. We will explore that in this problem.

For this problem, assume there is no government (i.e. $G = T = 0$), and the economy is characterized by the following equations:

$C = 15000 + \frac{1}{2}Y$

$I = 15000 + \frac{1}{4}Y$

(a) Using the $I = S$ equilibrium condition, find equilibrium Y, C, I and S.

(b) Create a graph of the $I = S$ equilibrium, with I, S on the vertical axis, and Y on the horizontal axis. Make sure to label all intercepts, slopes, and equilibrium quantities.

(c) Suppose b_0 increases from $15,000$ to $16,000$.

i. What are the new equilibrium values of Y, C, I and S?

ii. Draw this on your graph, and make sure to label the new intercept, and equilibrium quantities.

iii. What is the intuition as to why savings has increased when investment increased? How is this possible?