EC1010: Solutions: Tutorial Questions 8

April 2, 2010

1.   i Because output is below potential, it follows from Okun's law that the level of un-
employment is above the NAIRU. The difference between the level of unemployment
and the NAIRU is the level of cyclical unemployment.

   ii Because the output gap is -30, the government must raise expenditure by 10. This
way, equilibrium output will rise by $(3)(10)$, and the output gap will disappear.

   iii After the expansionary fiscal policy, output would be at potential, and the level of
unemployment would equal the NAIRU.

2. Cutbacks in government expenditure would have a greater effect in economy A. To see
why, suppose the MPC is .5 in economy A, while it is .1 in economy B. Thus if income
falls by 100 in economy A, consumption would fall by 50 (initially), while it would fall by
only 10 in economy B. In this sense, cutbacks in expenditure have greater contractionary
effects in economy A. This shows the multiplier works both ways.

3. This would imply that the multiplier falls in recessions, which would make expansionary
fiscal policy least effective just when it was truly needed.

4. Because people would want to save to pay off debt, this suggests the marginal propensity
to consume is low. As a result, the Keynesian multiplier would also be low, which would
make expansionary fiscal policy less effective. (Yet one could also argue that if banks are
unwilling to lend to indebted people, then the marginal propensity to consume for them
might be high (i.e., already short of funds, they would spend whatever they received); in
this case, expansionary policy would be *more* effective.)

5.   i. In this case the equilibrium condition in the economy would be

$$Y = AD \Rightarrow Y = C + I + G = a + mpc\,Y + b + dY + G$$

   ii. Solving this for equilibrium output Y yields

$$Y = \frac{a + b + G}{1 - mpc - d}$$

iii. The Keynesian multiplier is

$$\frac{\partial Y}{\partial G} = \frac{1}{1 - mpc - d} > \frac{1}{1 - mpc}$$

(Note that I should have imposed the condition $1 - mpc > d$ to ensure this makes sense.)

iv. In this environment, a rise in income/output would *also* raise investment, which in turn would raise aggregate demand and hence production and income *again*. For this reason, we get a greater multiplier effect.

6. A multiplier of zero implies that any increase in government expenditure simply crowds out another component of demand. In this case, for example, if government expenditure increased by 20, then investment, say, would *fall* by 20. Thus, increases in government expenditure would have no net effect on aggregate demand and hence production. This might occur if interest rates rose sharply when the government increased borrowing and expenditure.

7. The figures imply that government expenditure increased by 540 billion, while output increased by 430 billion. Assuming the government expenditure caused the increase in output, this implies that the multiplier is $\frac{430}{540} \approx .8$. Note that this is below the level assumed by mainstream Keynesian economists.

8. In this case, interest rates would likely rise as the government reduced savings and increased expenditure. In turn, this rise in interest rates would act to depress economic activity, and reduce the effectiveness of expansionary fiscal policy. (The same reasoning would apply if prices increased.)

9. The increase in economic activity induced by a fiscal expansion would raise tax revenue and partly finance itself.

10. In the consumption function, $C = a + mpc(Y - T)$, a once-off rise in savings could be represented as a fall in a (recall that savings is the counterpart to consumption.) As a result, aggregate demand in the economy would fall, which in turn would cause production and equilibrium output to fall. In this sense expectations about the future can be self-fulfilling. (This idea that rising savings can cause income to fall, and then, as a result, cause savings to fall again, is called the *paradox of thrift.* Mathematically, suppose the level of savings is sY, where s is the savings rate. According to Keynesian theory, a *rise* in s would cause a *fall* in Y, and so savings sY would not necessarily rise if the savings rate s rose.)