Economics 102 Name _____
Summer 2016
Quiz #4 with Answers

Show your work and present your work clearly and neatly!

1. Use the simple Keynesian Model presented in class for this problem. You are given the following information about an economy:

In equilibrium, Ye = AE
AE = C + I + G + (X - IM)
C = a + b[Y - (T - TR)]
Y = C + (T - TR) + Sp
Yfe = 320

You are also provided the following table:

Y	(T - TR)	C	I	G	(X - IM)	Sp
0	20	5	40	20	10	
100	20		40	20	10	
200	20		40	20	10	25

For this problem assume that (T - TR), I, G and (X - IM) are all autonomously determined outside of the model. Assume that the marginal propensity to consume and autonomous consumption do not change in this problem.

a. (1 point) Write an equation for the consumption function with respect to disposable income, [Y - (T - TR)]. Show all the work you did to find this equation.

Answer:
To find the MPC we need one more pair of coordinate points (disposable income, consumption spending) since we are only given one (-20, 5) in the table. So use the information on the fourth line of the table and the equation Y = C + (T - TR) + Sp to get this missing consumption spending value.
Y = C + (T - TR) + Sp
200 = C + 20 + 25
C = 155

Then, use the two pairs (-20, 5) and (180, 155) to find the MPC: MPC = (change in consumption spending)/(change in disposable income) = 150/200 = .75.

Now, you have C = a + .75[Y - (T - TR)]
Use one of your pairs to find the value of "a":
5 = a + .75[0 - 20]
a = 20

The consumption function is C = 20 + .75[Y - (T - TR)] if written with respect to disposable income.

The consumption function is C = 5 + .75Y if written with respect to GDP.

b. (1 point) What is the equilibrium level of GDP, Ye, for this economy? Show your work.

Answer:
Ye = AE
Ye = C + I + G + (X - IM)
Ye = 20 + .75[Ye - (T - TR)] + I + G + (X - IM)
.25Ye = 20 - .75(20) + 40 + 20 + 10
.25Ye = 90 - 15
.25Ye = 75
Ye = 300

c. (1 point) Given your answer in (b), describe this economy and how it is performing. Make sure you identify whether the economy is in a recession or a boom and what is happening to the level of unemployment in this economy. Explain the reasoning behind your answers!

Answer:
Since Ye < Yfe this tells us that this economy is operating in a recession where the level of spending is inadequate to get this economy to Yfe. Since Ye is less than Yfe, this tells us that the level of unemployment is greater than the natural rate of unemployment: there is cyclical unemployment as well as frictional and structural unemployment. Since this economy is not producing as much as it can produce from its resources, this tells us that there are resources that are not being employed.

d. (1 point) Suppose that this economy wishes to use fiscal policy to return the economy to Yfe. Describe fully the fiscal policy options that could be implemented to reach full employment verbally.

Answer:
To return to Yfe this economy needs more spending: two possible fiscal policies is an increase in government spending or a decrease in taxes. The decrease in taxes will cause an increase in disposable income for households enabling them to spend more in the economy.

e. (1 point) Provide the numeric values for the fiscal policy you described in (d). Make sure your answer provides two different types of fiscal policy that could be implemented in this economy so that this economy reaches Yfe. Show your work.

Answer:
i) Fiscal policy in the form of an increase in government spending:
(Change in Y needed) = (multiplier)(change in government spending)
Change in Y needed = Yfe - Ye = 320 - 300 = 20
20 = [1/(1 - b)](change in government spending) where [1/(1 - b)] is the multiplier
20 = (1/.25)(change in government spending)
20 = 4(change in government spending)
5 = change in government spending
So, an increase in government spending from 20 to 25 will get this economy back to Yfe.

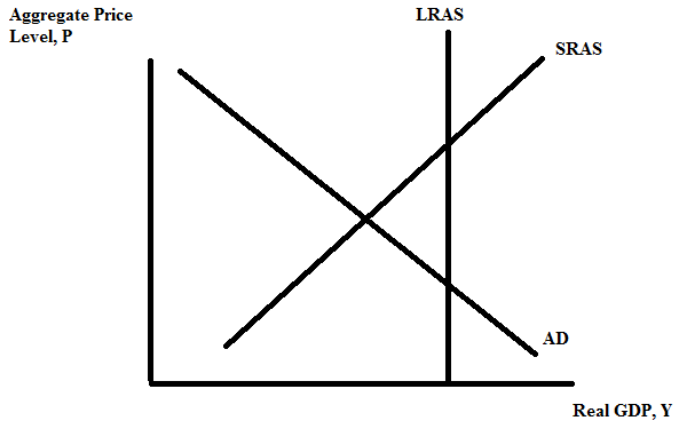
ii) Fiscal policy in the form of a decrease in taxes:
(Change in Y needed) = (tax expenditure multiplier)(change in taxes)
20 = [-b/(1 - b)](change in taxes)
20 = (-.75/.25)(change in taxes)
-20/3 = -6. 67 = change in taxes
So, a decrease in taxes from 20 to 13.33 will get this economy back to Yfe.

f. (1 point) Suppose that this economy has passed a balance budget amendment so that any increase in government spending must be matched by an increase in taxes, or any decrease in taxes must be matched by a decrease in government spending. Calculate the cost of the fiscal policy to reach Yfe under the assumption that there is a balanced budget amendment.

Answer:
(Change in government spending) = (change in taxes) with the balance budget amendment
(Change in Y needed) = (multiplier)(change in government spending) + (tax expenditure multiplier)(change in taxes)
20 = 4(change in government spending) + (-3)(change in taxes)
But, the change in government spending is equal to the change in taxes given the balanced budget amendment, so we have:
20 = change in government spending
So, an increase of 20 in government spending and an increase in taxes of 20 will get this economy to Yfe. So, if G is now 40 and (T - TR) is now 40, this economy will be at Yfe = 320.

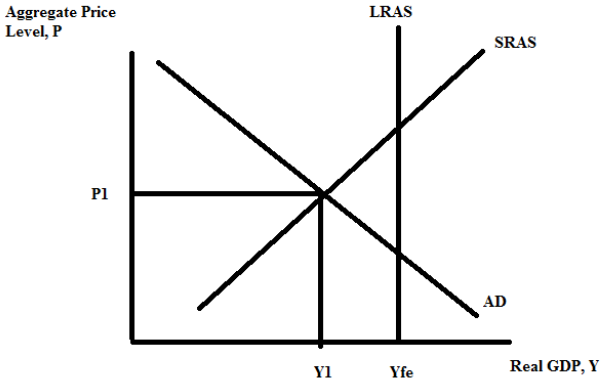
Here's the proof:
Ye' = C' + I + G' + (X - IM)
Ye' = 20 + .75[Ye' - (T - TR)'] + I + G' + (X - IM)
.25Ye' = 20 - .75(40) + 40 + 40 + 10
.25Ye' = 110 - 30
.25Ye' = 80
Ye' = 320 = Yfe!

2. Use the AD/AS Model discussed in class to answer this question. You are provided the following graph on an economy where SRAS is the short-run aggregate supply curve, LRAS is the long-run aggregate supply curve, and AD is the aggregate demand curve.



a. (1.5 points) On the graph, label the full employment level of real GDP, Yfe, the short-run equilibrium level of real GDP, Y1, and the short-run aggregate price level, P1.

Answer:



b. (1 point) Holding everything else constant, suppose that the government engages in fiscal policy in the form of increased government spending. Predict the short-run effect of this policy on the aggregate price level and the level of real GDP.

Answer:
An increase in government spending holding everything else constant, will shift the AD curve to the right and result in an increase in both the short-run aggregate price level as well as the short-run level of real GDP.

c. (1.5 points) Return to the original situation. If the government does not engage in fiscal policy or monetary policy, what will happen in the long-run in this economy? Be specific about the adjustment process that will result in this economy reaching its long-run equilibrium.

Answer:
If there is no activist monetary or fiscal policy we can anticipate that nominal wages will decrease shifting the SRAS curve to the right. In the long-run this decrease in nominal wages will result in a lower aggregate price level than at P1 and a return to Yfe.