

Please write your answers neatly and legibly.

1. Use the simple Keynesian model developed in class to analyze the economy described by the following information.

$$C = 20 + .5(Y - T)$$

$$TR = 0 \text{ (there are no transfers in this economy)}$$

$$T = 40$$

$$G = 50$$

$$X = 20$$

$$M = 30$$

$$I = 10$$

$$Y_{fe} = Y \text{ full employment} = 150$$

- a. (1 point) Examine this data. What can you conclude about government savings given this data? Explain your answer.

Answer:

$S_g = -10$ since $G > T$. This means that the government is running a deficit and therefore it has negative government saving.

- b. (1 point) Examine this data. What can you conclude about capital inflows into this economy? Explain your answer.

Answer:

This country is running a trade deficit since exports are less than imports. $(X - M) = -10$: the trade deficit is equal to -10. When a country runs a trade deficit this implies that the country has positive capital inflows: $KI = M - X = 30 - 20 = 10$. This economy is borrowing from foreigners.

- c. (1 point) Determine the equilibrium level of GDP for this economy. Show any formulas you use and show your work to get full credit for this answer.

Answer:

In equilibrium, $Y = AE$.

$$AE = C + I + G + (X - M)$$

$$AE = 20 + .5(Y - 40) + 10 + 50 + (20 - 30)$$

$$AE = 50 + .5Y$$

$$Y_e = 50 + .5Y_e$$

$$.5Y_e = 50$$

$$Y_e = 100$$

- d. (2 points) Consider your answer in (c) and compare it to Y_{fe} . What do you know about this economy's performance? What do you know about the unemployment rate in this economy? Explain your answer.

Answer:

Since $Y_e < Y_{fe}$ we know that this economy is operating in a recession and its actual unemployment rate is greater than the natural rate of unemployment. We know this economy has cyclical unemployment along with the normal structural and frictional unemployment.

- e. (1 point) Suppose the government decides to enact fiscal policy in order to reach full employment. Suppose the government enacts a change in government spending to reach this goal. Calculate what this change in government spending must be in order for this economy to reach full employment. Assume everything else is held constant. Show your work.

Answer:

$$\Delta Y = Y_{fe} - Y_e = 150 - 100 = 50$$

$$\Delta Y = (1/(1 - b))\Delta G$$

$$50 = (1/(1 - .5)) \Delta G$$

$$50 = 2\Delta G$$

$$\Delta G = 25$$

Government spending must increase by \$25.

Here's the proof that this will do it:

$$Y_e' = 20 + .5(Y_e' - 40) + 10 + 75 + (20 - 30)$$

$$.5Y_e' = 75$$

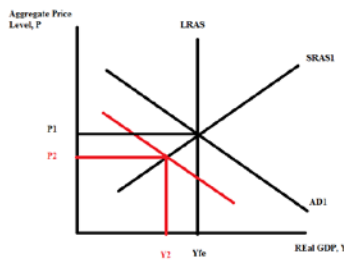
$$Y_e' = 150$$

2. Consider the AD/AS model of the aggregate economy developed in class. Assume this model is initially in long-run equilibrium where the economy is producing at Y_{fe} .

- a. (1 point) Suppose that there is a negative demand shock to this economy. Given this change, and holding everything else constant, what do you predict will happen to the aggregate level of real GDP and the aggregate price level in the short run? Explain your answer (it's fine to use a graph to illustrate your answer, but include explanatory words as well).

Answer:

A negative demand shock shifts the aggregate demand curve to the left: in the short run real GDP decreases relative to Y_{fe} and the aggregate price level falls relative to P_1 . Here's a graph to illustrate this short run outcome.



- b. (1 point) Given the negative demand shock described in (a), what happens to the unemployment rate in the short run? Explain your answer.

Answer:

Since $Y_2 < Y_{fe}$ we know the unemployment rate has risen in the short run above the natural rate of unemployment: there is cyclical unemployment.

- c. (2 points) What do you predict will happen in this economy in the long run given this negative demand shock and holding everything else constant? Explain your answer.

Answer:

The level of real GDP returns to Y_{fe} when the SRAS curve shifts right due to decreasing nominal wages. The aggregate price level decreases to a level lower than P_2 . Here's a graph illustrating this outcome.

