

Unit 3 Progress Check: FRQ

1. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to “Calculate,” you must show how you arrived at your final answer.

The economy of Country X is at full employment.

(a) Draw a correctly labeled graph of the long-run aggregate supply, short-run aggregate supply, and aggregate demand curves, and show each of the following.

(i) Current price level, labeled PL_1

(ii) Current real output, labeled Y_1

(b) Assume that household income increases as a result of recent economic prosperity in Country X. On your graph in part (a), show the effect of the increase in household income on real output and price level.

(c) What will be the effect of the change identified in part (b) on unemployment in Country X?

(d) Will the change in real output shown in part (b) be smaller or larger in the presence of automatic stabilizers? Explain.

 Please respond on separate paper, following directions from your teacher.

Part (a)

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

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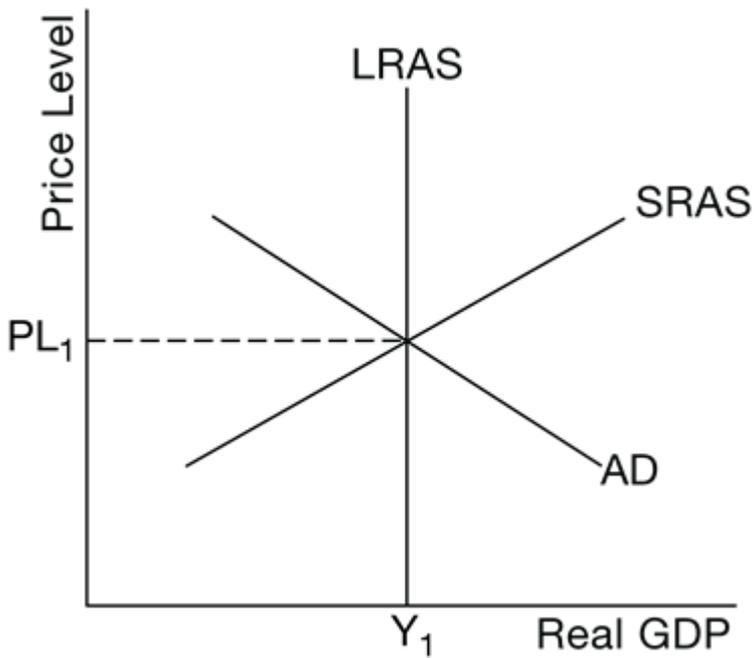
The response accurately includes both of the criteria below.

- A correctly labeled graph of the aggregate demand and short-run aggregate supply curves and shows the current price level, labeled PL_1 , and the current real output, labeled Y_1
- A vertical long-run aggregate supply curve at Y_1 at the intersection of **SRAS** and **AD**

Complete Solution



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Part (b)

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.



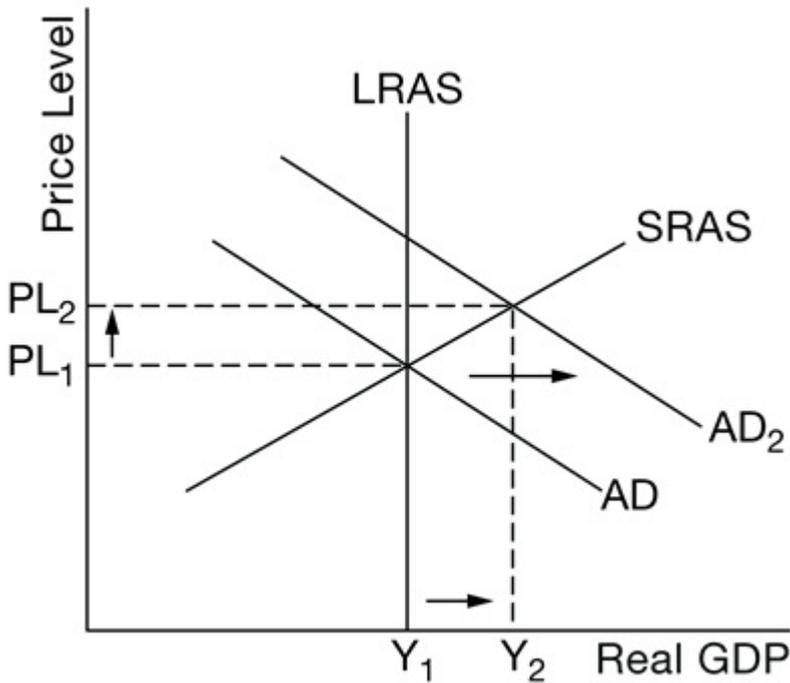
0	1
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The response shows a rightward shift of the aggregate demand curve and an increase in real output and price level.

Complete Solution



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Part (c)

Select a point value to view scoring criteria, solutions, and/or examples and to score the response. The response should be consistent with the change in real **GDP**



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The response states that unemployment will decrease.

Part (d)

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response must both state that the equilibrium real interest rate will be higher and explain why in order to receive the point.



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The response states that real output will be smaller in the presence of automatic stabilizers and explains that taxes will increase, resulting in a decrease in disposable income, a decrease in consumption, and a decrease in aggregate demand.

2. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to “Calculate,” you must show how you arrived at your final answer.

The economy of Newland is in short-run macroeconomic equilibrium. The current real output is \$400 billion, and the full employment output is \$500 billion. The marginal propensity to consume is 0.8.

- (a) Is the economy experiencing a recessionary output gap or an inflationary output gap? Explain.
- (b) Assume Newland’s government is considering taking action to close the output gap identified in part (a).
- (i) Calculate the minimum change and indicate the direction of change in government spending required to shift the aggregate demand curve to close the output gap. Show your work.
- (ii) If instead Newland’s government changes taxes without changing government spending, calculate the minimum change and indicate the direction of change in taxes required to shift the aggregate demand curve to close the output gap. Show your work.
- (c) Which fiscal policy action, changing government spending or changing taxes, is more effective in closing the output gap? Explain.
- (d) Assume instead Newland’s government decides not to take any policy action. Will short-run aggregate supply increase, decrease, or stay the same in the long run? Explain.



Please respond on separate paper, following directions from your teacher.

Part (a)

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Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

A response that states that the economy is in an inflationary gap or that fails to explain why the economy is in a recessionary gap will earn zero points.



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The response states that the economy is in a recessionary gap and explains that current real output is less than full employment output (**\$400 billion < \$500 billion**)

Part (b)

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response must show appropriate work in order to receive each point.

The response should be consistent with the output gap in part (a).



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The response accurately includes both of the criteria below.

- Calculates an increase in government spending of \$20 billion and shows appropriate work
- Calculates a \$25 billion decrease in taxes and shows appropriate work

Complete Solution

$$\begin{aligned} \frac{\text{Output gap}}{\text{Spending multiplier}} &= \frac{\text{Output gap}}{[1/(1-MPC)]} \\ &= \frac{(\$500 \text{ billion} - \$400 \text{ billion})}{[1/(1-0.8)]} \\ &= \frac{\$100 \text{ billion}}{5} = \$20 \text{ billion} \end{aligned}$$



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$$\begin{aligned} \frac{\text{Output gap}}{\text{Tax multiplier}} &= \frac{\text{Output gap}}{[-\text{MPC}/(1-\text{MPC})]} \\ &= \frac{(\$500 \text{ billion} - \$400 \text{ billion})}{[-0.8/(1-0.8)]} \\ &= \frac{\$100 \text{ billion}}{-4} = -\$25 \text{ billion} \end{aligned}$$

Part (c)

Select a point value to view scoring criteria, solutions, and/or examples and to score the response. The response must both state that the increase in government spending is more effective and explain why in order to receive the point. (A response that includes a comparison of the values calculated in part (b) to explain why government spending is more effective in closing the output gap is also acceptable.)



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The response states that the increase in government spending is more effective in closing the output gap than the decrease in taxes and explains that this is because the entire government spending increase goes toward increasing aggregate demand, but only a portion of the increased disposable income (resulting from lower taxes) is consumed due to the marginal propensity to save.

Part (d)

Select a point value to view scoring criteria, solutions, and/or examples and to score the response. The response must both state that short-run aggregate supply will increase and explain why in order to receive the point.



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The response states that short-run aggregate supply will increase in the long run because of the decrease in input prices or decrease in nominal wages.