

Problem Set 4 Solutions

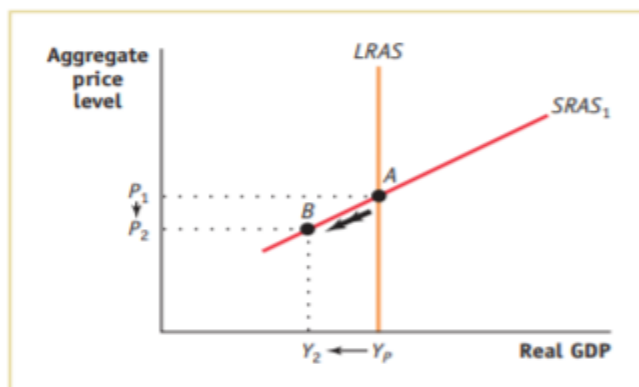
Problem

Suppose that in Wageland all workers sign annual wage contracts each year on January 1. No matter what happens to prices of final goods and services during the year, all workers earn the wage specified in their annual contract. This year, prices of final goods and services fall unexpectedly after the contracts are signed. Answer the following questions using a diagram and assume that the economy starts at potential output.

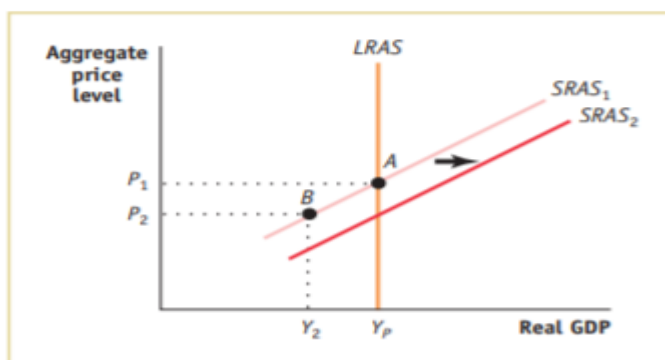
- In the short run, how will the quantity of aggregate output supplied respond to the fall in prices?
- What will happen when firms and workers renegotiate their wages?

Solution

- In the short run, the prices of final goods and services in Wageland fall unexpectedly but nominal wages don't change; they are fixed in the short run by the annual contracts. So firms earn a lower profit per unit and reduce output. In the accompanying diagram, Wageland moves along $SRAS_1$ from point A to point B after the fall in prices.



- When firms and workers renegotiate their wages, nominal wages will decrease, shifting the short-run aggregate supply curve in the accompanying diagram rightward from $SRAS_1$ to $SRAS_2$.



Chapter 12: Problems 4, 5, 6, and 10

4. Suppose that the economy is currently at potential output. Also suppose that you are an economic policy maker and that a college economics student asks you to rank, if possible, your most preferred to least preferred type of shock: positive demand shock, negative demand shock, positive supply shock, negative supply shock. How would you rank them and why?

Solution

4. The most preferred type of shock would be a positive supply shock. The economy would have higher aggregate output without the danger of inflation. The government would not need to respond with a change in policy. The least preferred type of shock would be a negative supply shock. The economy would experience stagflation. There would be lower aggregate output and higher inflation. There is no good policy remedy for a negative supply shock: policies to counteract the slump in aggregate output would worsen inflation, and policies to counteract inflation would further depress aggregate output. It is unclear how economic policy makers would rank positive and negative demand shocks. A positive demand shock brings a higher level of aggregate output but at a higher aggregate price level. A negative demand shock brings a lower level of aggregate output but at a lower aggregate price level. With either a positive or negative demand shock, policy makers could try to use either monetary or fiscal policy to lessen the effects of the shock.
5. Explain whether the following government policies affect the aggregate demand curve or the short-run aggregate supply curve and how.
- The government reduces the minimum nominal wage.
 - The government increases Temporary Assistance for Needy Families (TANF) payments, government transfers to families with dependent children.
 - To reduce the budget deficit, the government announces that households will pay much higher taxes beginning next year.
 - The government reduces military spending.

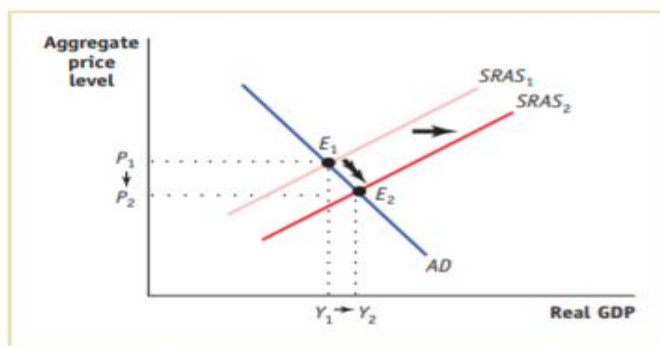
Solution

5. a. If the government reduces the minimum nominal wage, it is similar to a fall in nominal wages. Aggregate supply will increase, and the short-run aggregate supply curve will shift to the right.
- b. If the government increases TANF, consumer spending will increase because disposable income increases (disposable income equals income plus government transfers, such as TANF payments, less taxes). Aggregate demand will increase, and the aggregate demand curve will shift to the right.
- c. If the government announces a large increase in taxes on households for next year, consumer spending will fall this year. Since households base their spending in part on their expectations about the future, the anticipated increase in taxes will lower their spending this year. There will be a decrease in aggregate demand, and the aggregate demand curve will shift to the left.

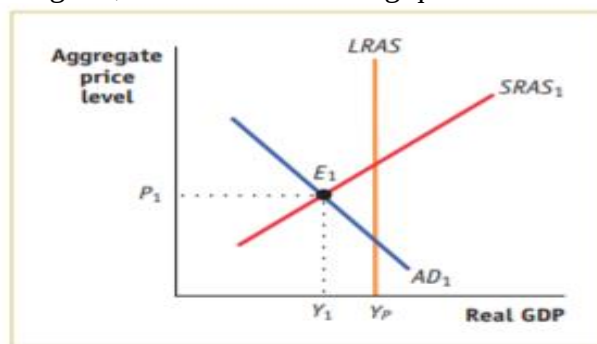
- d. If the government reduces military spending, this will decrease aggregate demand. The amount of aggregate output demanded at any given aggregate price level will fall, and the aggregate demand curve will shift to the left.
6. In Wageland, all workers sign annual wage contracts each year on January 1. In late January, a new computer operating system is introduced that increases labor productivity dramatically. Explain how Wageland will move from one short-run macroeconomic equilibrium to another. Illustrate with a diagram.

Solution

6. As labor productivity increases, producers will experience a reduction in production costs and profit per unit of output will increase. Producers will respond by increasing the quantity of aggregate output supplied at any given aggregate price level. The short-run aggregate supply curve will shift to the right. Beginning at short-run equilibrium, E_1 in the accompanying diagram, the short-run aggregate supply curve will shift from $SRAS_1$ to $SRAS_2$. The aggregate price level will fall, and real GDP will increase in the short run.



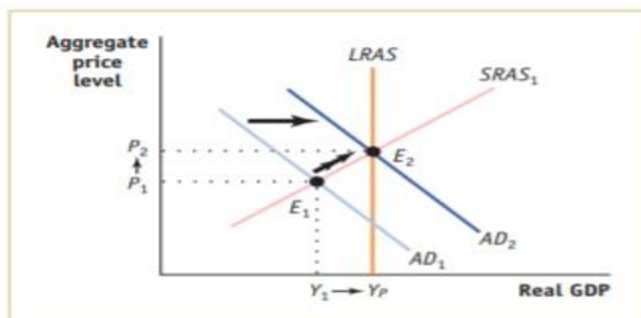
10. The economy is in short-run macroeconomic equilibrium at point E_1 in the accompanying diagram. Based on the diagram, answer the following questions.



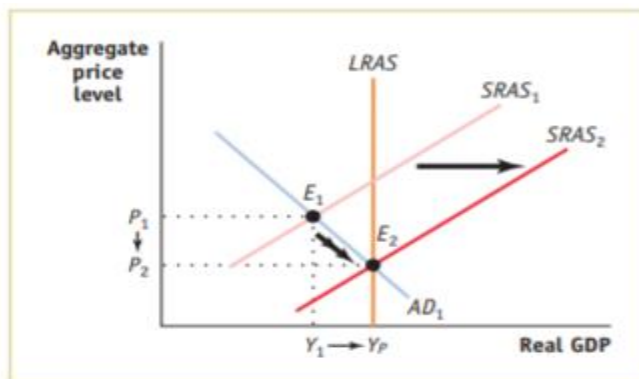
- Is the economy facing an inflationary or a recessionary gap?
- What policies can the government implement that might bring the economy back to long-run macroeconomic equilibrium? Illustrate with a diagram.
- If the government did not intervene to close this gap, would the economy return to long-run macroeconomic equilibrium? Explain and illustrate with a diagram.
- What are the advantages and disadvantages of the government implementing policies to close the gap?

Solution

10. **a.** The economy is facing a recessionary gap because Y_1 is less than the potential output of the economy, Y_P .
- b.** The government could use either fiscal policy (increase in government spending or reduction in taxes) or monetary policy (increase the quantity of money in circulation to reduce the interest rate) to move the aggregate demand curve from AD_1 to AD_2 in the accompanying diagram. This will move the economy back to potential output, and the aggregate price level will rise from P_1 to P_2 .



- c.** If the government did not intervene to close the recessionary gap, the economy would eventually self-correct and move back to potential output on its own. Due to unemployment, nominal wages will fall in the long run. The short-run aggregate supply curve will shift to the right, and eventually it will shift from $SRAS_1$ to $SRAS_2$ in the accompanying diagram. The economy will be back at potential output but at a lower aggregate price level.



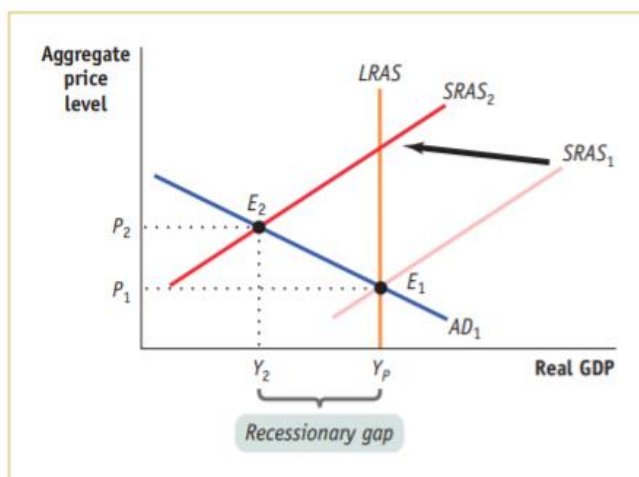
- d.** If the government implements fiscal or monetary policies to move the economy back to long-run macroeconomic equilibrium, the recessionary gap might be eliminated faster than if the economy was left to adjust on its own. However, because policy makers aren't perfectly informed and policy effects can be unpredictable, policies to close the recessionary gap can lead to greater macroeconomic instability. Furthermore, if the government uses fiscal or monetary policies, the price level will be higher than it will be if the economy is left to return to long-run macroeconomic equilibrium by itself. In addition, a policy that increases the budget deficit might lead to lower long-run growth through crowding out.

Chapter 13: Problems 3 and 4

3. An economy is in long-run macroeconomic equilibrium when each of the following aggregate demand shocks occurs. What kind of gap—inflationary or recessionary—will the economy face after the shock, and what type of fiscal policies would help move the economy back to potential output? How would your recommended fiscal policy shift the aggregate demand curve?
- a. A stock market boom increases the value of stocks held by households.
 - b. Firms come to believe that a recession in the near future is likely.
 - c. Anticipating the possibility of war, the government increases its purchases of military equipment.
 - d. The quantity of money in the economy declines and interest rates increase.

Solution

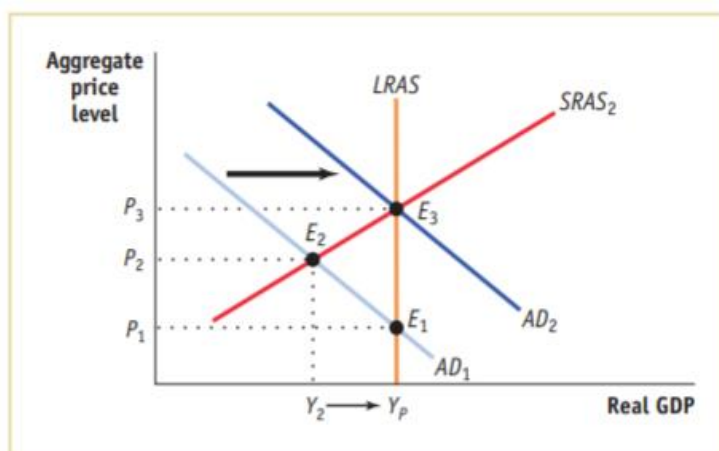
3. a. As a stock market boom increases the value of stocks held by households, there will be an increase in consumer spending; this will shift the aggregate demand curve to the right. The economy will face an inflationary gap. Policy makers should use contractionary fiscal policies to move the economy back to potential output. This would shift the aggregate demand curve to the left.
- b. If firms become concerned about a recession in the near future, they will decrease investment spending and aggregate demand will shift to the left. The economy will face a recessionary gap. Policy makers should use expansionary fiscal policies to move the economy back to potential output. This would shift the aggregate demand curve to the right.
- c. If the government increases its purchases of military equipment, the aggregate demand curve will shift to the right. The economy will face an inflationary gap. Policy makers should use contractionary fiscal policies to move the economy back to potential output. The government would need to reduce its purchases of non-defense goods and services, raise taxes, or reduce transfers. This would shift the aggregate demand curve to the left.
- d. As interest rates rise, investment spending will decrease and the aggregate demand curve will shift to the left. The economy will face a recessionary gap. Policy makers should use expansionary fiscal policies to move the economy back to potential output. This would shift the aggregate demand curve to the right.
4. During a 2008 interview, then German Finance Minister Peer Steinbrück said, “We have to watch out that in Europe and beyond, nothing like a combination of downward economic [growth] and high inflation rates emerges—something that experts call stagflation.” Such a situation can be depicted by the movement of the short-run aggregate supply curve from its original position, $SRAS_1$, to its new position, $SRAS_2$, with the new equilibrium point E_2 in the accompanying figure. In this question, we try to understand why stagflation is particularly hard to fix using fiscal policy.



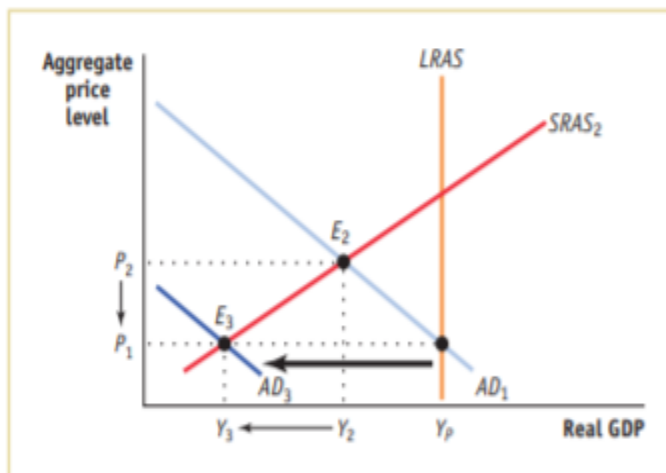
- a. What would be the appropriate fiscal policy response to this situation if the primary concern of the government was to maintain economic growth? Illustrate the effect of the policy on the equilibrium point and the aggregate price level using the diagram.
- b. What would be the appropriate fiscal policy response to this situation if the primary concern of the government was to maintain price stability? Illustrate the effect of the policy on the equilibrium point and the aggregate price level using the diagram.
- c. Discuss the effectiveness of the policies in parts a and b in fighting stagflation.

Solution

4. a. The government should adopt expansionary fiscal policy, such as lowering taxes or increasing spending. This would shift the aggregate demand curve to the right, moving the equilibrium output back to Y_P but increasing the price to P_3 .



- b. The government should adopt contractionary fiscal policy such as raising taxes or lowering government spending, causing the aggregate demand curve to shift to the left. The price level will decrease back to P_1 , but the recessionary gap will increase.



- c. Although expansionary fiscal policy can help bring aggregate output back to potential output, it also raises the aggregate price level. This makes the problem of inflation worse in a situation where low economic growth is coupled with higher-than-desired inflation. Contractionary fiscal policy—reduced government purchases of goods and services, an increase in taxes, or a reduction in government transfers—can help bring down the price level. However, contractionary fiscal policy will further increase the recessionary gap. So neither expansionary nor contractionary fiscal policy is effective in fighting stagflation.